

# soft sector™

*The Monthly Magazine For Sanyo MBC-550 and 555 Users*

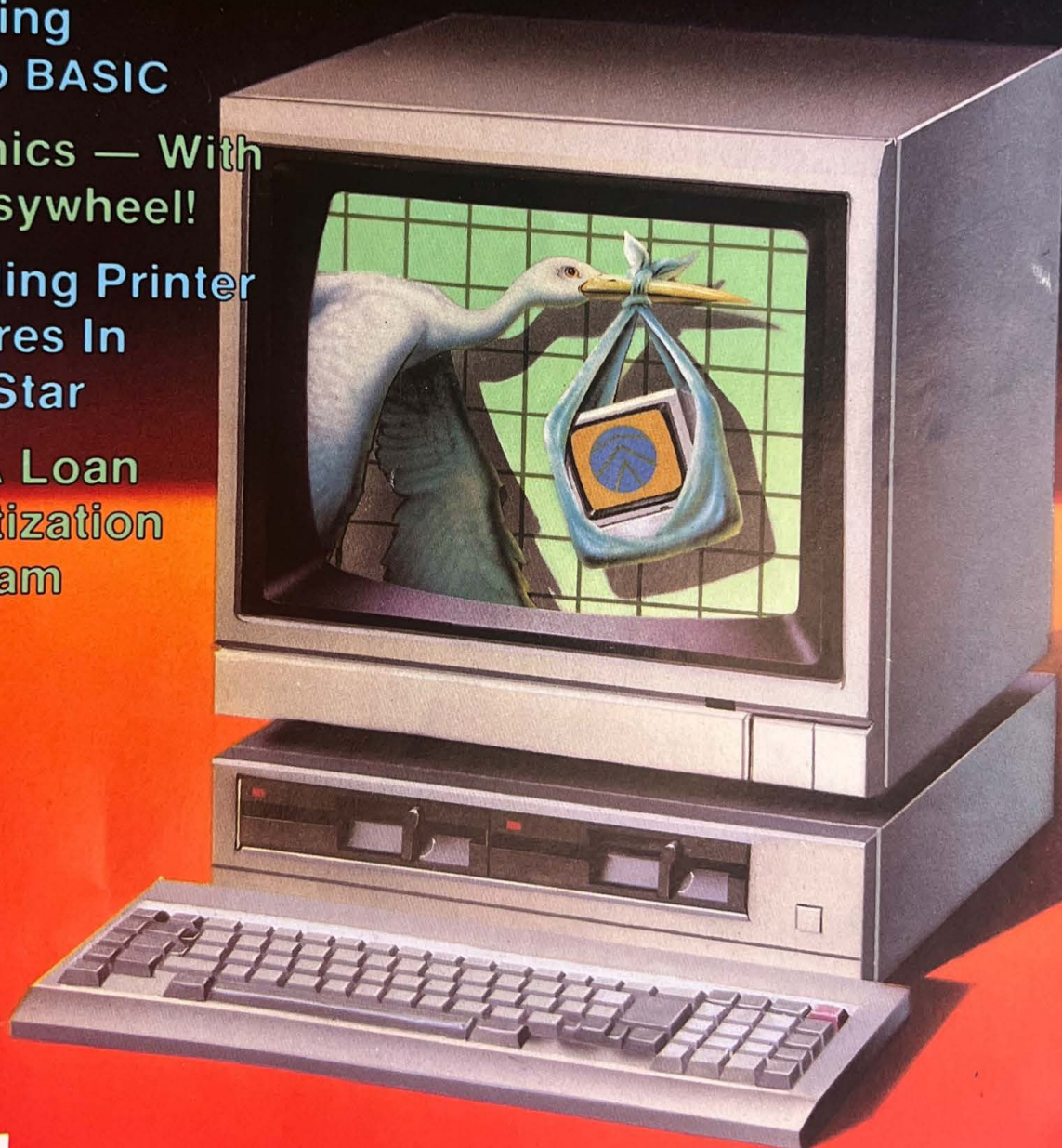
## Bridging The Compatibility Gap The Sanyo/IBM Connection

Learning  
Sanyo BASIC

Graphics — With  
A Daisywheel!

Installing Printer  
Features In  
WordStar

And A Loan  
Amortization  
Program



PLUS  
UTILITIES COMMENTARY TUTORIALS TWO Q & A COLUMNS  
AND HARDWARE, SOFTWARE AND BOOK REVIEWS





# PICASSO



## The **ULTIMATE** In Computer Graphics Programs

**PICASSO** by Bill Dunlevy

This is the one to set the standards! PICASSO does more than many graphics programs costing thousands of dollars more. Never before has such power and simplicity been available to the user.

What does PICASSO do? Everything!

- Large, helpful picture menus, eliminate the need to memorize control keys or cumbersome graphic languages.
- Keyboard, Joystick, or even Graphic Tablet controlled, in "directional" or "free-hand" format.
- You can choose from 64 pre-mixed colors, or mix your own for over 10,000 possible patterns, and save your favorites to a palette on disk!
- Over 20 different "brushes" let you draw with symbols in different "densities" for an air-brushed effect.
- Special "Rubber band" graphics let you see what you're doing AS you make adjustments on lines, rays, boxes, circles, polygons, stamps, etc.
- Versatile "Fill" permits you to change multi-color patterns.
- You're not restricted to simple circles and ellipses here! You can create ANY kind of polygon: from triangles, to elliptical pentagons, to perfect circles and everything in between!
- Powerful "Stamp" system lets you copy, move, save, and perform complex operations with any sections of your pictures.
- You can use your picture files with MichTron's new FREEZE FRAME graphic printing utility for fantastic hardcopy pictures, and in your own BASIC or machine language programs for all your graphic needs.

What DOESN'T PICASSO do? Restrict your imagination!

PICASSO is guaranteed to knock your smocks off!  
256K SANYO MBC-550/555 required  
(Joystick recommended)

**\$99.95**

## MichTron

6655 Highland Road • Pontiac, Michigan 48064  
(313) 666-4800





## EDUCATIONAL SOFTWARE

### FLYBOY

Flying at 8500 feet, you discover that you have only 9 minutes of fuel left. Land your aircraft safely with the help of the air traffic controller. Graphic instrument panel and runway. Use with a joystick or keyboard. Ages 8 and up.  
\$39.95



### TRIVIA MANIA

The hottest new trend in games has gone computer! Up to six players travel the game board answering trivia questions and trying to be the first to reach the Big Question. Different trivia disks are available to keep this game exciting.  
\$39.95

"SOFTWARE MADE ON AND EXCLUSIVELY FOR THE SANYO MBC-550 SERIES COMPUTER"

### INVENTORY

Will hold 1200 items. Cash register function. Automatic turnover and reorder.  
\$99.95

### ACCOUNTS RECEIVABLE

Statements of account. Finance charges and minimum payments. Ages accounts.  
\$99.95

### TOUCH SKILLS

Typing tutor for the beginning to intermediate typist. Typing drills and game.  
\$39.95

### INCHWORM

Learning game for children. Strategy game for adults. A fun game for everyone.  
\$29.95

### PAYROLL

Easy to understand. Holds up to 100 employees. Contains all payroll functions.  
\$99.95

### ACCOUNTS PAYABLE

Works with or without voucher system. Prints checks. Easy to use & understand.  
\$99.95

### BODY SYSTEMS

Graphic. Skeletal, Respiratory, Digestive, & Circulatory systems are included.  
\$39.95

### FLASH CARD

Improves addition, subtraction, multiplication and division skills. Graphics.  
\$29.95

### GENERAL LEDGER

Income statements, balance sheets. Works with other OES accounting software.  
\$99.95

### MONEY ANALYSIS

Amortization, mortgage analysis, interest on savings, and other analyses incl.  
\$39.95

### STATES & CAPITALS

Identify each state and its capital by the shape of the state. Good graphics.  
\$29.95

### BLACK JACK

Plays just like the real thing. Hit, split, double down, insurance and more.  
\$39.95

### POSTMASTER II

Full function mailing list. Formats to any labels. Great for business or home.  
\$49.95

### FINANCE MANAGER

An accounts payable program for the home. Keeps track of tax-deductible items.  
\$39.95

### APPOINTMENT BOOK

Plan appointments from now until 1999. Graphic calendar display of each month.  
\$39.95

### SPELLING BEE

Learn to spell with your own list of words or the computer's. 12 skill levels.  
\$39.95

**OLYMPIC**  
EDUCATIONAL SOFTWARE

1500 SOUTH 336th, SUITE 6  
P.O. BOX 3679  
FEDERAL WAY, WASHINGTON 98063



CALL: (206) 874-4044 or (206) 952-4114

WE ACCEPT MASTERCARD & VISA (include card # and expiration date), CHECK, COD, OR MONEY ORDER. ALL ORDERS ARE SHIPPED UPS, FREE OF CHARGE. PLEASE ALLOW 4 DAYS TO RECEIVE YOUR ORDER. WASHINGTON STATE RESIDENTS, PLEASE ADD 7.8% SALES TAX.



# soft sector

The Monthly Magazine for  
Sanyo MBC-550 and 555 Users

Vol. I, Issue 1

August 1984

Editor and Publisher  
Lawrence C. Falk

Managing Editor James E. Reed

Copy Editor Susan A. Remini

Technical Editor Danny Humphress

Submissions Editor Jutta Kapfhammer

New Products/Reviews Editor Kevin Nickols

Consulting Editor Courtney Noe

Contributing Editors Fred Blechman,  
Michael W. Ecker, Ph.D., Gordon Monnier,

Brian M. Stone, Charlotte A. Stone

Editorial Assistants Valarie Edwards,  
Wendy Falk, Suzanne Kurowsky,

Greta J. Martin-Eneje, Lynn Miller,

Shirley Morgan, Noreen Morrison

Technical Assistant Ed Ellers

Art Director Neal C. Lauron

Design Staff Peggy Henry, Jerry McKiernan,

Kevin Quiggins

Advertising Manager Charlotte Ford

(502) 228-4492

Advertising Representative Maralyn Backus

(313) 666-4884

Advertising Assistant Debbie Baxter

Advertising and Marketing Office for the Western  
states and provinces: Cindy Shackelford, director,  
12110 Meridian South, Suite 8, P.O. Box 73-578, Puyallup,  
WA 98373-0578. Phone: (206) 848-7766. Territories  
included: AK, AZ, CA, CO, HI, ID, MT, NV, NM, OR, UT,  
WA, WY, Canadian Provinces of Alberta, British Columbia,  
Saskatchewan.

SOFT SECTOR is represented in the New England  
states and New York by Garland Associates, Inc., P.O.  
Box 314, S.H.S., Duxbury, MA 02331, (617) 934-6546.  
Territories included: CT, ME, MA, NH, NY, RI, VT.

## FPSS, Ag. Publishing Enterprises, Inc.

President

Lawrence C. Falk

General Manager Patricia H. Hirsch

Editorial Director James E. Reed

Creative Director Sally Nichols

Assistant General Manager for Finance

Donna Shuck

Bookkeeper Diane Moore

Advertising Accounts Doris Taylor

Dealer Accounts Judy Quashnock

Administrative Assistant To The Publisher

Marianne Booth

Director of Fulfillment Services

Bonnie Shepard

Assistant Customer Service Manager

Deidra Henry

Customer Service Representatives

Sandy Apple, Monica Wheat

Word Processor Manager Lynda Wilson

Research Assistants Wanda Perry,

Loretta Varda, Kara Voit

Dispatch Mark Herndon

Production Assistant Melba Smith

SOFT SECTOR — The Monthly Magazine for Sanyo MBC-  
550 and 555 Users is published every month of the year by  
FPSS, Ag., Publishing Enterprises, Inc., 9529 U.S. Highway  
42, P.O. Box 385, Prospect, KY, 40059. Phone (502) 228-  
4492. SOFT SECTOR — The Monthly Magazine for Sanyo  
MBC-550 and 555 Users and the SOFT SECTOR logotypes  
are trademarks of FPSS, Ag.

Second class postage pending at Prospect, KY and addi-  
tional offices. POSTMASTER: Send address changes to  
SOFT SECTOR, P.O. Box 385, Prospect, KY 40059. Forward-  
ing Postage Guaranteed.

Entire contents copyright © 1984, by FPSS, Ag. SOFT  
SECTOR — The Monthly Magazine for Sanyo MBC-550 and  
555 Users is intended for the private use and pleasure of its  
subscribers and purchasers and reproduction by any means  
is prohibited. Use of information herein is for the single end  
use of purchasers and any other use is expressly prohibited.  
All programs herein are distributed in an "as is" basis, with-  
out warranty of any kind whatsoever.

Sanyo MBC-550 and 555 are registered ® trademarks of  
the Sanyo Business Systems Corp.

Subscriptions to SOFT SECTOR — The Monthly Maga-  
zine for Sanyo MBC-550 and 555 Users are \$28 per year in  
the United States. Canadian and Mexican rates are U.S. \$35.  
Surface mail to other countries is U.S. \$64, air mail U.S. \$85.  
All subscriptions begin with the next available issue.

Payment accepted by VISA, MasterCard, American  
Express, Cash, Check or Money Order in United States cur-  
rency only.

## FEATURES

- Unlock Those Number Crunchers/Michael W. Ecker, Ph.D. .... 8**  
Your Sanyo can be a plus in solving math problems
- The Dialect Difference/Fred Blechman ..... 12**  
Converting IBM PC BASIC to the Sanyo
- The Gambler/Roger S. Heitzeg ..... 15**  
A sure bet for your game collection
- Creating Graphics And Letterhead With  
A Daisywheel Printer/Brian M. Stone ..... 34**
- Bridging The Compatibility Gap/Laurence L. Raper, C.L.U. ... 36**  
A tool for improving Sanyo/IBM PC compatibility
- Fastloan/Michael Ecker, Ph.D. .... 50**  
Calculating those loans and investments
- MS-DOSSier/Danny Humphress ..... 52**  
Part 1 in a series on learning MS-DOS
- Your Printer Can Shine With WordStar/Brian M. Stone ..... 55**  
Taking advantage of your printer's special capabilities

## DEPARTMENTS

- Advertisers Index ..... 62**
- Clubs, Clubs, Clubs ..... 33**  
A comprehensive list of user groups in your area
- Input/Output/Tim Purves ..... 26**  
Answers to your technical questions
- Letters To The Editor ..... 7**
- Racksellers ..... 62**
- Soft Soapbox/Lawrence C. Falk ..... 6**  
Editor's Notes
- Soft Talk ..... 29**  
New products
- Submitting Material ..... 48**
- Subscription Information ..... 45**

## REVIEWS

- Appointment Book ..... 42**
- Cashman ..... 45**
- DS-DOS ..... 44**
- Easy-Draw ..... 47**
- File Base ..... 43**
- ProofReader ..... 46**
- Keyword ..... 48**

Cover art copyright® by Dean Armstrong



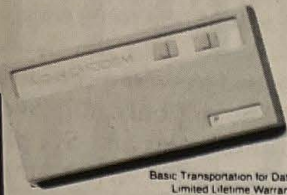


# TEX\*COMP™

AUTHORIZED DEALER  
ANCHOR AUTOMATION  
World's Leading Modem Manufacturer

America's Number One SANYO dealer.

**Sanyo**  
**MBC 550**  
AUTHORIZED DEALER



Basic Transportation for Data  
Limited Lifetime Warranty

Proudly Introduces The  
**VOLKMODEM**  
The Complete Low-Cost Plug-In Modem.

It puts computer-to-computer communications within easy reach of every personal computer owner.

Just plug Volkmodem™ between any wall phone jack and telephone and put your computer into instant communication with thousands of others. It's that easy. No extra parts or tools are necessary—just one adapter cable and software is all that's needed. Completely portable, Volkmodem transmits both voice and data over all common telephone lines, automatically changes from Originate to Answer and back again when you're in the data mode, and uses a low-cost 9V battery or optional plug-in adapter. With Volkmodem's ability to access data sources as well as transmit data information, it's the truly affordable way to maximize your personal computer productivity.

## Volkmodem Features

Direct connection for RS-232C type interface  
Bell 103 compatible  
Built-in interface cable and connector  
Internal 9V battery  
Audible carrier detect signal  
Full/half duplex switch  
0-300 baud  
Data/voice switch  
Automatic originate/answer mode selection

## Specifications

**Data Format:** Serial, binary, asynchronous  
**Operate Mode:** Manual dial, Automatic ANSWER/NO ANSWER selection  
**Data Rate:** 0-300 bps, full/half duplex  
**Modulation:** Frequency shift keyed (FSK)  
**Line Interface:** Direct connect to wall outlet  
**Data Interface:** RS-232C compatible via selected cables  
**Transmit Frequency:**  
Mark: 1270 Hz, Answer: 2225 Hz  
Space: 1070 Hz, Answer: 2025 Hz  
**Transmit Frequency Accuracy:** ±0.01%  
**Transmit Level:** -12 dbm typical  
**Receive Frequency:**  
Mark: 2225 Hz, Answer: 1270 Hz  
Space: 2025 Hz, Answer: 1070 Hz  
**Receive Frequency Tolerance:** ±0.5%  
**Carrier Detect Threshold:** -44 dbm typical  
**Carrier Detect Indicator:** Audible tone  
**Power Requirement:** Internal 9V transistor battery  
Size: 8" x 4" x 1 1/2"  
Battery not included

**\$59.95**  
PLUS  
CABLE

IN STOCK - IMMEDIATE DELIVERY

Includes shipping & insurance  
—plus—  
**FREE Source Sign-On**  
(a \$100+ value)

**SPECIAL: VOLKMODEM CABLE FOR SANYO PC (with RS232 interface) only \$8.95 when ordered with Volkmodem (reg \$12.95)**

## SPECIAL OFFER:

### MARK XII 300/1200 Intelligent Modem

HAYES SMARTMODEM™ COMMAND STRUCTURE

■ 300/1200 BAUD ■ BELL 103 & 212 A COMPATIBLE ■ AUTO ANSWER/AUTO DIAL  
■ AUTOMATIC SPEED MODE SELECTION ■ CABLE INCLUDED (115") ■ 2 YEAR WARRANTY  
■ RS 232 C COMPATIBLE ■ ENHANCED NOISE IMMUNITY (Communication Software Not Included)

**\$259.95 Postpaid**  
(FREE Source Sign-On  
With Purchase)



**SPECIAL: SANYO RS232 INTERFACE (REQUIRED WITH ANY MODEM) .....\$79.95 POSTPAID**

## "YOUR HEAD IS DIRTY!"

Smoke in the air, dust on work surfaces, along with fingerprints and other contaminants can destroy your valuable software. Now the leading cause of data loss can be controlled quickly and easily with HEAD Diskette Cleaning Kits. Apply a few drops of HEAD cleaning solution on one of the cleaning disks included with your kit and in 30 seconds your disk heads are clean. It's that simple! Works with all single and dual drives.

Protect your valuable investment.  
\$34.95 list

**\$15.95** Complete Kit  
FREE SHIPPING\*

2-5/4" cleaning diskettes  
1-4 oz. bottle cleaning solution  
1-Dispensing sprout

**HEAD COMPUTER PRODUCTS**  
When you MUST have cleanheads



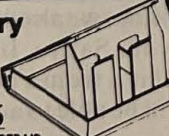
### Flip 'N' File™ For 5 1/4" Mini Disks

Keep diskettes safe and organized  
Under Dividers provide easy retrieval—adjustable tabs can be set to desired positions.  
Dust Free Presentation Flip 'N' File are self contained storage units with hinged lids which, when closed, protect your disks from dust that can lead to loss of important information.  
Storage Capacity each unit has a storage capacity of 50-60 disks. The unique Jid design provides for easy access and also doubles as a carrying handle.

**\$19.95**  
POSTPAID

See-through lid flips up for instant access — stays securely closed in transit.

5 1/4" Library Case  
10 FOR  
**\$19.95**  
POSTPAID



Stores and protects flexible disks. Enclosed easel displays disks for easy retrieval. Manufactured from high-impact polystyrene.  
Each holds up to ten diskettes

### GREAT DISKETTES

Super low prices  
LIFETIME WARRANTY!

5 1/4" 5DDO 5 1/4" 5DDP  
**\$185 \$235**  
including postage  
Qty 20 Qty 20

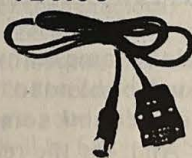
The low priced, high quality diskette with a LIFETIME WARRANTY Priced in packages of 10 with Tyvek envelopes labels and numbered tabs.  
One of the best buys we've seen

Fast service by mail  
...or phone

### SANYO TYPE RGB MONITOR CABLE

FOR SANYO  
MBC-550,555.  
TO BE USED WITH MOST  
RGB MONITORS  
USING 8 PIN CONNECTOR

**\$23.95 POSTPAID**



Before you plug-in your computer, you'd better consider how you are going to insure or protect your investment from unwanted electrical pollution.

LINEGARD® protects against damaging voltage spikes which can degrade or destroy the internal components of your solid state equipment. Acts as a "shock absorber" without interfering with normal current flow! Just plug it into any 15A, 125 VAC outlet,

### Spike Protection

Model LG-10

- Wall plug-in unit
- 6 "U" ground outlets
- Indicator light
- Internal overload protection

**\$19.95**

FREE SHIPPING

**NEW**



**SANYO COMMUNICATIONS SOFTWARE**  
BY MICHTRON. SUPPORTS 300/1200 BAUD  
MI-TERM only ..\$59.95 with modem purchase!

SEND ORDER AND MAKE CHECKS PAYABLE TO:

**TEX\*COMP™**

P.O. BOX 33084 — GRANADA HILLS, CA 91344

TERMS All prices FOB Los Angeles. For fastest service use cashiers check or money order. Personal checks take at least ten days to clear. Add 3% shipping and handling (\$3.00 minimum). East of Mississippi 4 1/2%. (Free shipping on all software orders over \$100 and on postpaid specials). Add 6 1/2% ST. for delivery in California. Prices and availability subject to change without notice. We reserve the right to limit quantities.



**VISA and MASTERCARD**  
HOLDERS CALL DIRECT:  
(818) 993-5606

Credit Cards add 3%





# SOFT SOAPBOX

**W**elcome to SOFT SECTOR, the magazine for users of the Sanyo 550 series computers. We hope you will like our first issue and that you will be with us for number two . . . and the rest that will follow.

We have, essentially, one aim — publishing a quality magazine that will be helpful/useful/entertaining to you as you get to know, use and enjoy your Sanyo 550 series microcomputer. In that regard, we would hope that you will treat us as “one of the computer family,” and let us know what you like and what you dislike about SOFT SECTOR. We would like to be *the source* you can count on; but we can't do that without your input.

So write or call us. Give us your comments, your suggestions and send us your questions. We want your praise (who doesn't), but we want your criticism, too. We can only improve and tailor SOFT SECTOR to meet your needs if you let us know what those needs are. So, please, consider SOFT SECTOR to be the *most* user-friendly peripheral your Sanyo 550 series computer has. We're looking forward to working with and for you!

Who are we? We are a company in Prospect, Kentucky (a suburb of Louisville). The name of the firm which publishes SOFT SECTOR is FPSS, Ag. Publishing Enterprises, Inc., a division of Falsoft, Inc. Falsoft publishes three other magazines — two of them machine-specific, one for the Radio Shack Color Computer (THE RAINBOW) and the other for the Radio Shack Model 100 Portable Computer and the Tandy 2000 (PCM — The Magazine for Professional Computing Management). Our third publication is a sports magazine for fans of University of Louisville sports teams.

THE RAINBOW was, essentially, the first totally machine-specific computer magazine; that is, specific to *one machine* as opposed to being specific to a *line* of computers. It just celebrated its third birthday with the average issue running a little over 300 pages. We believe that SOFT SECTOR is also capable of attracting this sort of support (in both circulation and advertising) to sustain a magazine several times the size of this inaugural issue.

Before THE RAINBOW made its debut, we had never published anything. In fact, we weren't even in existence. So, we're something a bit different in the publishing world in that we find an attraction for something — read that something we like — and we investigate the possibility of a publication. Sure, we are a for-profit company, but we don't just publish something because we believe there is a “market out there.”

The people who edit and write SOFT SECTOR use Sanyo MBC-550/555 computers every day — both in writing and working with the jobs they have to do and in testing programs and functions from articles. In other words, we *use* the Sanyo computers: We're not just trying to make some money off of them.

I think it is important that you know that we are *fans* of the Sanyo computers as well. We believe they are good machines, have excellent capabilities and are sold at a very fair price. If you were to have to make a choice, say, between an IBM PC and a Sanyo MBC-550, there would be no comparison — the Sanyo would win hands down.

In the publishing business, we get suggestions to publish machine-specific magazines almost every week. We, of necessity, have to pick and choose. In looking at the support potential of computers, we have studied a lot of them — and it is the Sanyo which has captured our interest and imagination. You, no doubt, feel the same way about *your* Sanyo. Well, here it is *our* Sanyo, too, and we feel the same enthusiasm.

That is not to say we will be blind to the problems that can be associated with *any* computer. We'll let you know when we think something is amiss — hopefully with some suggestions on how to make it better. And, for the record, we are an independent publication: We have no business connection with Sanyo. So, we're able to call 'em as we see 'em.

The same goes for our advertisers, or for anyone who makes any sort of product for the Sanyo. We very firmly separate our editorial and advertising functions — in other words, you can't buy a good product review. Over the years, we have found that fair and accurate reviews are appreciated not only by our readers, but by the advertisers themselves. So, we hope you will come to trust our product reviews and use them as a buying guide.

Finally, you most likely are aware that no magazine can survive on subscription revenue alone. We certainly do encourage you to tell your friends and associates about SOFT SECTOR, and we certainly hope that all of you will subscribe. But, in addition, we also hope you will help us grow by mentioning our name when you buy products for your Sanyo. If your purchase is from an advertiser, please do us a favor and tell him or her so. If it is from a non-advertiser, do us another favor and mention SOFT SECTOR. As we grow, we will be able to add editorial pages and provide you with even more information than we can now.

We're excited about our Sanyo computers and about SOFT SECTOR. I'm glad you picked up this first issue and hope to see you again next month.

— Lonnie Falk



# LETTERS TO THE EDITOR

*Editor:*

We extend our congratulations and wish you and your co-workers well in premiering your new publication, *SOFT SECTOR*, which will appear beginning August 1984.

Intended for users of our personal computer models MBC-550 and MBC-555, your publication is sure to find an anxious readership.

We, too, look forward to working closely with you in our common goal of market support for Sanyo computers.

*S. Yamazaki, President  
Sanyo Business Systems Corp.*

*Editor:*

Just a note to express my appreciation for the effort and professionalism that is apparent in the first issue of *SOFT SECTOR*.

Sanyo intends to be a major force in the computer industry and I hope that your growth will parallel ours.

Your writers and editorial staff will have access to any information that we have and will be welcome at our offices at any time.

Again, all the best.

*Arthur Shebar  
National Sales Manager  
Computer Division  
Sanyo Business Systems Corporation*

*Editor:*

There's no doubt about it, we surely got a great deal when we bought the Sanyo MBC-550 series computer! Wow! It's almost completely compatible with the IBM PC and what a price!

Well, I am here to tell you that the Sanyo might be more compatible than you have realized, but you do need to get some help from people around you who are also using the 550 series. This is why your readers should join a users group! There's a lot of you out there who just made your very first home-computer purchase and you're wondering whether you made a mistake or not. Well, like I said before, you have surely not!

You should know right off the bat, that you have a better BASIC than IBM's. Our

BASIC can address all of our memory while IBM's can only address approximately 64K. I know that you're complaining that you do not have enough information on using this wonderful BASIC, but remember that patience has its own reward.

Don't be afraid to experiment with your machine. Practice with your training manuals and be sure to join a users group. There's always somebody out there that knows more than you do, but there's always somebody out there that knows less. Share your knowledge, there's strength in numbers.

*Bob Tercero  
San Bruno, CA*

*Editor:*

Congratulations on your new magazine, *SOFT SECTOR*. I know it will be a hit! We're looking forward to seeing a lot of new programs being published and reviewed. Since the Sanyo is so new, it would be nice to hear from other readers and Sanyo owners in regards to helpful hints in the operation and software areas so everyone can benefit from it. We here at Michigan Software (43345 Grand River, 48050) have started a users group called S.U.G.G.E.S.T. — Sanyo Special Users Group Gathering Enjoying Sanyo Technology — meeting every first Monday of the month exchanging ideas. A listing of clubs would be helpful in the future. As the use of Sanyo computers increases, I'm sure more clubs will develop. Of course, hardware is always a good subject. Before you know it there will be Sanyo BBSs too!

I think you have chosen the right time to start *SOFT SECTOR* magazine. The demand for Sanyo is moving very fast and so will your magazine.

*Michigan Software  
Novi, MI*

**Editor's Note:** Please see our "Clubs, Clubs, Clubs" section in this issue for a comprehensive listing of users groups. Every group is encouraged to join the list.

*Editor:*

[I just heard] the very good news about your new magazine, *SOFT SECTOR*. All the Sanyo computer users will be very happy to hear that you are going to produce the magazine. I have had my MBC-555 since November, and when I first got the thing, I thought that I had really made a mistake. After daily calls to software producers and months of use, I have more programming than I can edit in a year. With a double-sided DOS, Softlink and Olympic software and many others producing quality software for the 550 series, they will make the Sanyo owner very happy. I constantly send Sanyo software all over the world. The word is not completely out yet; your magazine will be the best help that the Sanyo computer user could have.

*Ted R. Hartman  
Sierra Vista, AZ*

*Editor:*

We have already begun manufacturing products for the Sanyo and are considering a club in the Lincoln and Omaha, Neb., area for Sanyo users. Best wishes for as good or better success with *SOFT SECTOR* as with *THE RAINBOW*.

*John Kelty  
Kelty Engineering*

*Editor:*

I received your advance notice to dealers on your new *SOFT SECTOR* magazine for Sanyo MBC-500 series users. Congratulations! It should be a great help to all of us. I hope you do it right. I think the computer is the greatest buy on the market!

*John Tripp  
Hollywood, CA*

*Letters To The Editor are always welcome. Please keep them short if possible and we will try to answer some of the questions in this column. Others may be left open for solutions by other users. In order to make space for as many letters as possible, we reserve the right to edit submissions.*

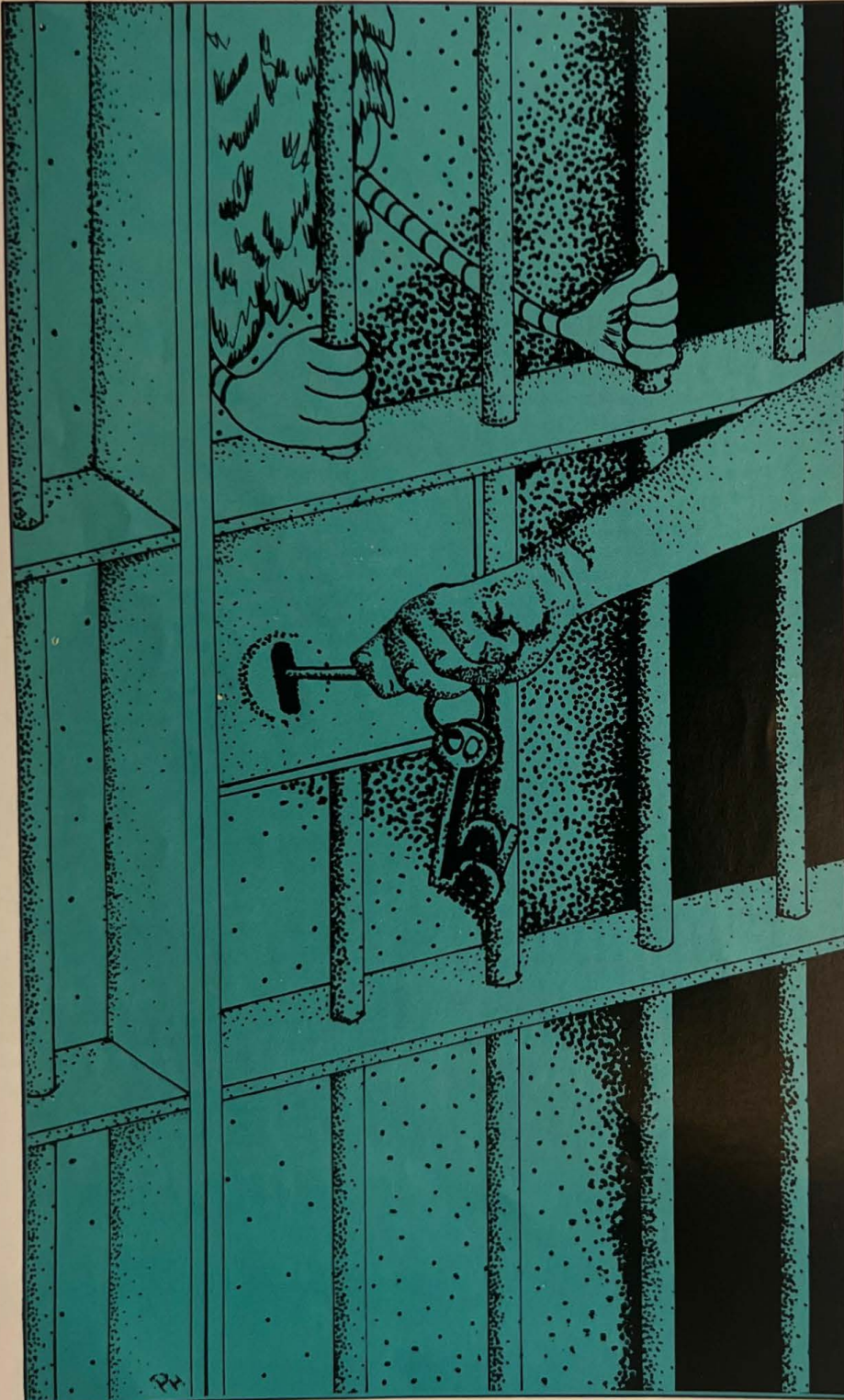
*Letters can be sent to Soft Sector, P.O. Box 385, Prospect, KY 40059.*



Let your Sanyo help you . . .

# Unlock Those

By Michael W. Ecker, Ph.D.  
Soft Sector Contributing Editor



If you have recently purchased a Sanyo 550/555 or are considering buying one soon, you are faced with the question of what uses you wish to make of it. Of course, you can purchase software for playing games, doing word processing, database management, graphics, and so on. However, one equally valid use of a computer is to solve problems by writing your own programs. I would like to present a few intriguing recreational problems and indicate how a computer can assist in solving them (without you having to know a lot of mathematics). In the course of solving, we will take a look at the programming language of BASIC.

The first question is one which you might like to try with a pencil and paper first just to get a feel for it. Suppose a jailer has 100 convicts, one per cell, in 100 cells. He offers a partial amnesty based on the following scheme. Initially, all cells are closed. Then, at minute number one, every cell is opened. However, no con may leave during this process. Then, at minute number two, every second cell — that is, cells numbered two, four, six, etc. up to 100 — is reversed so that these cells are now closed. Of course, cells one, three, five, etc. are still open, and in any case, inmates still may not leave. At minute number three, every third cell — that is, cells three, six,

*(Dr. Michael W. Ecker is assistant professor of mathematics at the Worthington Scranton Campus of the Pennsylvania State University, as well as an author and contributing editor to Popular Computing and Byte magazines. His company, Recreational Mathematical Software, is marketing Magic Math, a collection of unusual mathematical recreations for the Sanyo and other IBM-compatible machines, as well as TRS-80 Models I, III and 4.)*



# Number Crunchers

nine, etc. — is reversed. Hence, any one of these cells previously open is now closed and vice versa.

Now this process is repeated at minute number four, with every fourth cell reversed, and so on. This is continued up to minute 100. The amnesty offer is that any con in a cell, which is open at the end of the 100 minutes, may go free. So, the question now is this: Which cells are open at the end of the 100 minutes?

For instance, consider the prisoner in cell number six. His cell is opened at minute one, closed at minute two, opened again at minute three, not affected at all during minutes four and five, and then the cell is closed again at minute six — never to be opened again. On the other hand, four is luckier, as his cell is opened at minute one, closed again at minute two, not affected at minute three, and then opened at minute four, so he will go free, since the cell will never again be reversed.

## Computer Assistance And BASIC

In order to utilize the capabilities of a microcomputer, you have to be able to program it. Simply put, you have to instruct the machinery as to what you wish it to do. You cannot simply speak in everyday English (or any natural language), but must use a language the computer has been wired to accept. One widely used language for micros is BASIC, which is an acronym for Beginner's All Purpose Symbolic Instruction Code, developed about 20 years ago at Dartmouth University. Although it is not the best language for many applications, it is offered in some form on almost every home computer, and hence, it continues to gain wide exposure. Our purpose is to review a few commands of most dialects (or variants) of BASIC to see how we could solve our problem above.

In BASIC, instructions are typed into the computer on numbered lines by the

program's author. After each line, you must hit a RETURN or ENTER key to indicate the completion of an instruction. Lines with earlier or smaller numbers are executed or obeyed before those with later or larger numbers. In a moment you will see examples of this. Bear in mind, though, that the instructions are not followed by the computer until you tell the computer to do so. Generally, you do not do this until you have finished typing in the entire program. At this point you type *RUN*.

Of all instructions, one of the most important is the assignment of values to variables. Think of computer variables as empty registers or boxes you create to hold numerical values (or other information). Statements which assign variables might look like these examples, with line numbers:

```
10 LET A = 10
25 PI = 3.14159
```

(That's right, *PI* is the name of the quantity.) The word *LET* is often optional, and note that there are no periods at the end of these "sentences." This is a valid (albeit not very useful) two-line program. Line 10 creates a register or variable called *A* and immediately assigns it the value 10. Line 25 creates one called *PI* (named after the familiar constant of geometry) and assigns it the value 3.14159. Let's see how we can use this to

make more complicated formulas. For instance, with Lines 10 and 25 as above, you could then have a Line 30, say:

```
30 B = A + PI
```

Thus, *B* is assigned the value  $10 + 3.14159 = 13.14159$ . Registers *A* and *PI* still hold the values they originally held. It is important to realize that statements such as  $A=A+PI$  or  $A=A+1$  are perfectly valid in a program. The statement  $A=A+1$ , for instance, instructs the computer to open up register *A* and assign it the value equivalent to whatever is currently in register *A* plus one. In this case, if *A* were previously equal to 10, it would now be equal to 11. If there were no previous assignment or creation of a register *A*, most computers treat this situation as though *A* were previously created but equal to zero. (This makes sense in that you can say that *A* previously had nothing in it.) The question of whether to reuse the same variable twice, as in  $A = A + 1$ , or a new variable, as in  $B = A + 1$ , depends on what your program is designed to achieve.

Suppose you wanted to write a program to compute something. There would still be the problem of getting the machine to indicate the answer. That is, the computer does not automatically show the results on the screen. To make

*"[BASIC], although it is not the best language for many applications, . . . is offered in some form on almost every home computer, and hence, it continues to gain wide exposure."*



it do so, you instruct it by the *PRINT* command. For example, if you wished the computer to tell you the result of Line 30 from above (the one adding A and PI), you might use a Line 40 (or any other line number larger than 30):

```
40 PRINT B
```

Our program looks like this now:

```
10 LET A = 10
25 PI = 3.14159
30 B = A + PI
40 PRINT B
```

If you now type *RUN* the computer will show 13.14159 on the screen as the result. Obviously, this is not a very efficient use of a computer (a calculator would be faster), but the point is just to illustrate some possibilities. The real power of a computer lies in its ability to rapidly execute repetitive types of calculations, not isolated ones as in the above. This brings us to the idea of a loop. One of the most used is the *FOR . . . NEXT* loop.

Suppose we erase our old program first. Although this may be done by turning the computer off and then on again, or resetting it, you would have to reload BASIC. Instead, simply type the word *NEW* (for new program).

Consider this program now:

```
10 FOR K = 1 to 10
20 PRINT K
30 NEXT K
```

This tells the computer in Line 10 to open a register K which first will have the value of one. Then the computer is told in Line 20 to print K, or one. Then Line 30 tells it to take the next value of K, which is understood to be one higher. So, now K equals two, the computer prints K's value, or two, and then the computer takes the next K, or three. This continues and the net effect is to print the numbers one to 10. You can see how powerful this can be if you

wanted, say, the square roots of the first 100 numbers. Such a program would look like the above except that Line 20 would be changed to read: *20 Print Sqr(K)* (or whatever your computer uses to indicate square root — mine uses *SQR*). Try typing that new program in with this new Line 20.

Again, remember to hit the *RETURN* or *ENTER* key after each line. When the program is complete, type the word *RUN*. The above program would print

part. Of course, if the *IF* part is not true, the computer does not bother with the *THEN* part. Here is a sample and what the computer does.

```
10 A = 10
20 IF A = 8 THEN PRINT "A is
equal to 8"
30 IF A = 10 THEN PRINT "A is
equal to 10"
```

Of course, since A is not equal to eight, the computer will not print out "A is equal to 8," but it will print out "A is

*"The real power of a computer lies in its ability to rapidly execute repetitive types of calculations, not isolated ones . . ."*

out the square roots of the first 100 whole numbers. As a variation, suppose you wished only the square roots of the even numbers from two to 100. In other words, the square roots of two, four, six, etc., up to 100. You indicate to the computer that you wish to skip some steps in a *FOR . . . NEXT* loop by a *FOR . . . NEXT . . . STEP* command. The *STEP* part tells the computer not to go up by one each time you go through the loop, but rather to go up by some other value. In this case, our program to print out the square roots of two, four, six, . . . , 100 might look like this:

```
10 FOR K = 2 to 100 Step 2
20 PRINT SQR(K)
30 NEXT K
```

One last powerful command to consider is the *IF . . . THEN* statement. Essentially, the computer tests the *If* part, and if true, it obeys the *THEN*

*equal to 10.*" A slightly more elaborate and powerful command is the *IF . . . THEN . . . ELSE* one. Essentially, it allows you an additional option to try when the *IF* part fails to hold. We will now see how we can apply this idea, and the other ones, to the eccentric jailer problem with which this article began.

#### Computer Solution To Jailer Problem

If you tried this problem with pencil and paper, then you know it can be just a little tedious to grind out what happens to all those cells. And, we would like to find out about them all in order to get a chance to look for a pattern. What we need to do is write a program — one that will keep a record of which cells are open and which are closed. We will need to use the repetitive power of the computer (via *FOR . . . NEXT* type loops) to make it automatically record the effect of the opening and closing of



certain doors. For the former, we could get into what are called string variables, but instead will adopt the convention that the number one indicates open and zero indicates closed. We will store the results of open and closed, or one and zero, in array variables A(1), A(2), A(3), and so on up to A(100). That is, storage of a one in, say, cell 10 is indicated by A(10) = 1, and this means that cell 10 is open at the moment. If A(15) = 0, say, then this indicates that cell 15 is now closed. Here, array variables are a convenience for situations where many variables are needed. (It would take too long to use A, B, C, . . . etc., and would be too haphazard.)

You will frequently want to have your computer clear the screen. Why? Basically, just to have irrelevant items out of view so that what you are really interested in will stand out. Bear in mind this does not erase memory though, and your program will not cease to exist. While clearing the screen is easy to do, many computers use different commands. For instance, on a Sanyo MBC or TRS-80, use *CLS*. On an Apple, use *HOME*, and so on. The program below should run on almost all computers with very few changes needed.

```
1 DIM A(100)
10 CLS
20 FOR MINUTE = 1 TO 100
30 FOR CELL = MINUTE TO 100
STEP MINUTE
40 IF A(CELL)=0 THEN A(CELL)
= 1 ELSE IF A(CELL) = 1
THEN A(CELL) = 0
50 NEXT CELL
60 NEXT MINUTE
100 FOR CELL = 1 TO 100
110 IF A(CELL) = 1 THEN PRINT
"One open cell is";CELL
120 NEXT CELL
```

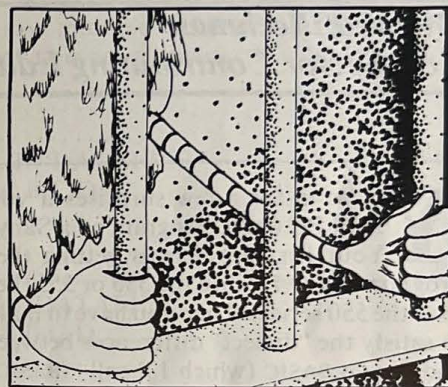
Line 1 is needed to do something called "dimensioning an array" — that is, telling the computer how many vari-

ables you need and are planning to use. It could come either before or after Line 10 and not make a difference. Note that each array variable implicitly starts out equal to zero, corresponding to all cells being closed initially. Line 10 clears the screen. Now let's see what the computer actually does. In Line 20, the computer first sets a variable, which I call *MINUTE*, equal to one. This corresponds to the first minute. Now, in Line 30, the computer makes a variable, *CELL*, to correspond to cell numbers. The variable *CELL* goes from *MINUTE*, which is now one, to 100, in steps one at a time, which means that the cell numbers go up by one at a time. *CELL* is first equal to one. In Line 40, since A(CELL) or A(1) starts out as 0, it is now set equal to one to correspond to cell number 1 being opened. The *ELSE* statement is ignored. Line 50 instructs the computer to go to the next value of *CELL* in Line 30, which is two. Since, in Line 40, A(2) (using Cell = 2) is 0, A(2) is now set equal to 1. Then Line 50 sends the program back to Line 20 again, and all this repeats with cells 3, 4, . . . , 100.

After we hit 100, the last value of *CELL*, the computer does not continue going back to Line 30, since *CELL* only goes from one to 100. So, the next line is 60, *NEXT MINUTE*, which sends control back to Line 20. There, *MINUTE*, which previously was one, is now set equal to two. Now the loop in Line 30 begins again. That is, we have *CELL* going from *MINUTE* to 100 *STEP MINUTE*. Here, *MINUTE* = 2, so we go from *CELL* = 2 to 100 jumping two cells at a time. Can you see how this will then simulate the opening and closing of cells? In particular, each time through, Line 40 will change open cells to closed and vice versa. Think about this and see whether you can continue following through a bit more of the program.

Finally, Lines 100, 110, 120 serve to check — after the computer has simu-

lated the opening and closing of cells — which cells remain open after the process. It does this by printing out the numbers of cells which are open (corresponding to a 1). Note that the *IF . . . THEN* statement of Line 110 assures that only those cells which are open are so indicated.



If you type in this program in your computer, you will get a very surprising and interesting result: the first 10 perfect squares (numbers which are equal to some whole number times itself). Can you figure out why this pattern occurs? If not, you might like to see my column, "Recreational Computing" in the July 1983 issue of *Popular Computing*.

You probably get the idea as to how BASIC programs can help crunch numbers and lead you to discover patterns. With some practice, some good books, and fun hours exploring the Sanyo 550/555, you may find new pleasures in using your computer to solve problems.



(Editor's Note: This article is based closely on Dr. Ecker's "BASIC Number Crunchers," first published in the Winter 1983-84 issue of *Buyer's Guide to Small Computers*.)



# The Dialect Difference

## Converting IBM PC BASIC To Sanyo BASIC

**By Fred Blechman**  
*Soft Sector Contributing Editor*

**Y**ou're in for a few surprises if you plan to run an IBM PC BASIC program on a Sanyo MBC-550/555! Your first problem is getting the IBM PC BASIC program to *LOAD* into the 550 or 555 (hereinafter referred to as the 550 series). Then you have to make certain changes to satisfy the "dialect" differences between IBM PC BASIC and Sanyo BASIC (which I'll call "IBASIC" and "SBASIC"). This article will help you do both.

### Loading

You have probably discovered by now that you can slip an IBM PC diskette in a 550 series drive and read the directory with the *DIR* or *DIR / WMS-DOS* commands. (You are in MS-DOS when you have an 'A:' or 'B:' prompt. You are in BASIC with a "Ready" prompt.)

However, even though you can read the directory of the IBM diskette, your SBASIC will not *LOAD* an IBASIC program — with two exceptions we'll cover shortly. Try it. Get in SBASIC by typing *BASIC* at the 'A:' prompt with a Sanyo MS-DOS diskette in the right-hand drive. When you press the down-left arrow and ENTER key, SBASIC will load into memory, and sign-on with a "Ready" prompt and blinking cursor below it. This is the first difference with IBASIC, since the IBM PC BASIC prompt is "OK," not "Ready."

### Directory

To get the diskette directory in SBASIC, use the keyword *FILES*, or just press the lower-left PF10/PF5 function key. Try this with the MS-DOS disk you received with the

Sanyo. Notice that several filenames are followed by *BAS* (which is called the "extension"). These are BASIC programs. To *LOAD* a BASIC program, simply type *LOAD"NAME"* and press the ENTER key. Of course, "NAME" (in quotes) is the filename of the BASIC program you want to *LOAD*. The closing quote is not actually required, but it's good practice to use closing quotes, since they are sometimes required with other commands.

The disk drive will start and very quickly you'll see the "Ready" prompt and cursor, indicating the program has *LOADED*. Now type *LIST*, press the ENTER key, and the program will *LIST* on the screen. You can stop and start the *LISTing* with the Space Bar. So far everything is fine.

### IBM-BASIC Program

Take the Sanyo MS-DOS disk out of the drive and put in a diskette that has one or more IBM PC BASIC programs. Press the PF5 key and the word "FILES" appears on your screen, followed by the disk directory. Pick a program name from the disk (one with *BAS* as the extension) and type *LOAD"NAME"* and press the ENTER key. Almost immediately you get the "Ready" prompt back on screen. Everything appears to be normal. However, when you type *LIST* and press the ENTER key, you'll get an Illegal Function Call Error message. The program did not *LOAD*!

It appears that IBASIC stores programs in a different format from SBASIC. At this point it seems like you're at an impasse. Take heart, however, since there are three ways to get an IBASIC program *LOADED* into SBASIC.

### The ASCII Way

BASIC programs can be *SAVED* from memory onto disk in two ways by most computers. The first, and most common way, saves disk space, and is often referred to (properly or not) as "compressed," "tokenized" or "binary." This is done with the normal *SAVE"NAME"* command.

*(Fred Blechman, an acknowledged authority on home computers, has written several articles and books related to microcomputers. He is a self-taught electronics and computer BASIC programmer and specializes in writing for beginners.)*



However, programs can also be *SAVED* in ASCII format by simply using the command *SAVE"NAME",A* — that is, using a comma followed by an 'A' after the normal *SAVE* command. Here's the good news: A BASIC program *SAVED* in ASCII on an IBM PC will *LOAD* directly into Sanyo BASIC using the regular *LOAD"NAME"* command! So, if you can have someone save a particular IBM PC BASIC program in ASCII on an IBM PC single-sided diskette, you'll be able to *LOAD* it into the Sanyo 550 series.

### The Compaq Way

There are several IBM PC "compatible" computers that get around the IBM PC copyright of its BASIC by using equivalent software loaded from diskette. The Compaq Computer uses a program called *BASICA* that mimics, for all practical purposes, the IBM PC *BASICA*, including the advanced features. You can get a copy of a diskette with Compaq *BASICA* (on the same diskette that has Compaq DOS 2.0) for about \$50 from a Compaq dealer.

If you have *BASICA*, just type *BASICA* at the MS-DOS 'A:' prompt, and it will load into the Sanyo 550 series memory. You will then be able to *LOAD* an IBASIC program from an IBM PC diskette. However, do *not* try to *RUN* the program. More on that in a moment.

### The Hard Way

You can enter an IBASIC program directly into SBASIC from the keyboard, using a program *LISTing* from a book or magazine article, character by character. This is tedious, time-consuming, and leads to typing entry errors that can be hard to spot when you *RUN* the program. It is, however, a last resort — if you have the printed *LISTing*. Do *not* try to *RUN* it, however, until you first *SAVE* the program on disk with the name of your choice, using *SAVE"NAME"*. Programs *SAVED* in this manner are automatically assigned a *BAS* extension. Be careful! Even if you use *SAVE"NAME",A*, the *BAS* extension will be assigned — and replace any "compressed" program with the same name! It's good practice when *SAVEing* a program in ASCII to assign *ASC* as the extension in this manner: *SAVE"NAME.ASC",A*.

### BASIC Pitfalls

Okay, so now you have an IBM PC BASIC program in memory. If you try to *RUN* it, you'll probably crash, unless it's a very "plain-vanilla" program. The safest thing to do is to first *SAVE* the program in Sanyo BASIC, so you at least have it in a program file before any crash. Then, it's simple to *LOAD* it again in its latest version. For this reason, follow this rule: *SAVE your program on disk every five minutes or less!*

This way, if you crash, you'll still have a version that was working before the changes you made in the last five minutes.

### The Dreaded Interrupt

You are liable at any time, when making IBASIC to SBASIC translations, to see the message "interrupt trap halt" on your screen. If you do, it's *sayonara* to all in memory; the only way out of this is the Reset button on the left-side apron of the keyboard, which puts you back in MS-DOS boot-up. That's why it's so important to *SAVE* your program frequently!

### BASIC No-Nos

The biggest problem in translating programs from IBASIC

to SBASIC is getting rid of IBM PC machine specific calls. If you see a *POKE* in an IBASIC program, you should delete it if it's causing a problem. Actually, the program might seem to glide over these *POKEs* without causing a problem at that point, but can create a crash later in the program. So be aware that if the program crashes, look for *POKEs* somewhere earlier in the program. *DEF SEG* is another potential statement that can cause problems. (However, deleting the *POKEs* may cause the program to run improperly or not at all.)

Two statements that seem to have no value or purpose in SBASIC are *SCREEN* and *WIDTH*, although they have definite functions in IBASIC regarding screen mode and printer width. My advice is to remove them for SBASIC, even though in most cases they are merely ignored.

Variables in IBASIC can have periods within them — such as *PERCENT.TAX* — but this results in a Syntax Error in SBASIC. You can have variables over 16 characters long in SBASIC (although anything beyond 16 characters is not recognized), but no punctuation is allowed within the variable name.

### Disk Files

It is common to save multiple variables in a disk file. The following portion of a program is perfectly valid in IBASIC:

```
.....  
.....  
100 OPEN "O", I, "DATAFILE"  
110 PRINT #1,A,B,C,D  
120 CLOSE  
.....  
.....  
200 OPEN "I",I, "DATAFILE"  
210 INPUT #1,A,B,C,D  
220 CLOSE  
.....  
.....
```

---

***"Here's the good news: A BASIC program SAVED in ASCII on an IBM PC will LOAD directly into Sanyo BASIC using the regular LOAD"NAME" command!"***

---

Notice that when writing to the disk with the *PRINT #* statement, the variables are separated by regular commas, used as "delimiters."

But this will result in a "Type Mismatch In XXX" Error message when you try to read in the disk file in SBASIC! The solution is not obvious, but simple (though annoying). When writing the data file to the disk (*PRINT #*), you must separate each variable from the next with a comma surrounded by quotes as the delimiter. Don't forget the quotes.

The read file statement (*INPUT #*) can use ordinary commas as delimiters. This SBASIC quoted-comma delimiter can be a real head-scratcher if you're not aware of it.



## Spaced Out!

Although most BASICs require a space after keywords, some don't. IBM PC BASIC does in most cases, and so does Sanyo BASIC. If you're not sure, use a space. When translating from some TRS-80 BASICs, this is particularly critical.

## Using *PRINT USING*

One of the most powerful BASIC formatting commands is *PRINT USING*. This is used primarily for laying out a "template" of how variables will be placed on a printed line. It allows the program to automatically line up decimal points and round off numbers to the specified number of places. Dollar signs and "literal strings" (text) can be placed on the line in exact positions. It's like a multiple *TAB* command, but with additional capabilities. *PRINT USING* is available in both IBASIC and SBASIC, but SBASIC is very particular about template punctuation and the two words, *PRINT* and *USING*, being used together.

For example, the following portion of a program will *RUN* perfectly in IBASIC, but will result in several syntax errors in SBASIC:

```
10 A$="TESTING":B$="PROGRAM"
20 X=15.255:Y=100.504
30 P$=" \ \ \ \ ##.## ##.##"
40 T$="####.## ##.##"
```

```
.....
100 PRINT USING P$;A$;B$;X;Y
110 XT=XT+X:YT=YT+Y
.....
```

# 15 GAMES FOR EDUCATION AND FUN WITH YOUR SANYO COMPUTER, FOR THE PRICE OF ONE. \$29.95

On a single disk you get, not one, but 15 educational and fun games for use on the 16 bit, SANYO 550 series computer.

Whether you want to try to rule a country, learn mathematics skills, or seek adventure, these 15 games will provide hours of fun and learning for the entire family.

See Your Sanyo Dealer Today  
or call Facts Online™ (619) 483-5393

```
200 PRINT TAB(20) USING P$;" ";XT;YT
210 PRINT TAB(32)"GRAND TOTALS:";USING T$;
XT;YT
```

To start with, Sanyo BASIC uses the ampersand instead of the backslash mark for the string template (Line 30). This will cause an error in SBASIC in Line 100 when the program cannot accept the template, *P\$*, in a *PRINT USING* statement. Cure: Replace the backslashes with ampersands in Line 30.

Now the program crashes at Line 200 because the words *PRINT* and *USING* are separated by other characters. This

*"One of the most powerful BASIC formatting commands is PRINT USING. This is used primarily for laying out a 'template' of how variables will be placed on a printed line."*

is an SBASIC no-no. Cure: Rewrite the line so *TAB(20)* follows *PRINT USING*, like this:

```
200 PRINT USING P$;TAB(20);" ";XT;YT
```

But, while this will allow Line 200 to be processed, two ampersands will be printed where there should be blank spaces. That's because SBASIC needs a space between the quote marks, while IBASIC doesn't care. So now Line 200 looks like this:

```
200 PRINT USING P$;TAB(20);" ";XT;YT
```

Now the program crashes at Line 210, again because the *PRINT* and *USING* are separated. SBASIC does not recognize *USING* unless immediately preceded by *PRINT* or *LPRINT*. So, this line should have a *PRINT* added before *USING*, as follows:

```
210 PRINT TAB(30) "GRAND TOTALS:";PRINT
USING T$;XT;YT
```

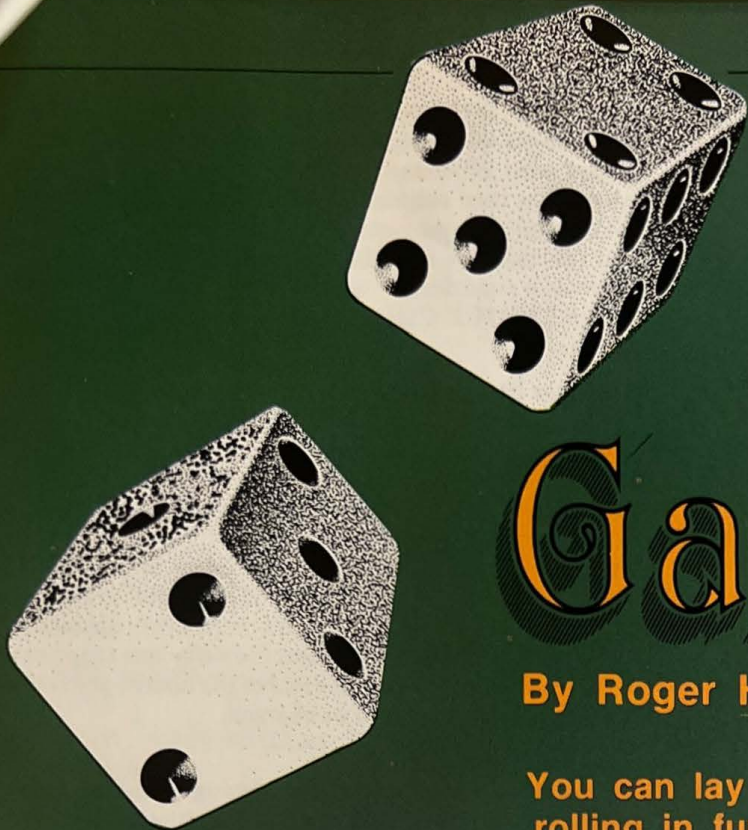
The simple rule is to always be sure that *PRINT* or *LPRINT* is immediately before *USING*, and rearrange the program line, or insert a *:PRINT* or *:LPRINT* to accomplish this.

This article by no means covers all the differences between IBM PC BASIC and Sanyo BASIC. Each has some commands that are not recognized by the other, such as *SCREEN* and *WIDTH* mentioned earlier. *SYMBOL*, a very powerful SBASIC graphics command for magnifying text and placing it anywhere on the screen in any of four orientations, is not even available in IBM PC BASIC. However, the differences discussed here can save you many hours of Syntax Error messages and other grief.

*Editor's Note: This article is based on material from a forthcoming book by the author, Sanyo MBC-550/555 Beginner/Intermediate Guide, soon to be published by Holt, Rinehart and Winston, a division of CBS College Publishing.*

Copyright © 1984 by Fred Blechman





# The Gambler

By Roger Heitzeg

You can lay odds this game will keep you rolling in fun

**C**raps, a popular casino game, is a natural for showing off the BASIC graphics capabilities of your Sanyo personal computer. This relatively simple game of chance can be played by one or two players.

For those of you who are not familiar with the game, here are the basics. The game is played with two dice. After each player places his bet, the dice are thrown. There are several things which can happen on the first roll. If a two (called snake eyes), a three (called cockeyes), or a 12 (called box cars) is rolled; the house wins and that turn is over. On the other hand, if a seven or an 11 is rolled (called a natural), the house loses and pays all debts (1:1). If any other number is rolled, this number becomes the "point," and play continues into a second phase. In this phase, the dice are continually thrown until either a seven or the point is rolled. Prior to beginning this phase, players are asked to place their money on "Pass" or "Don't Pass." If the shooter rolls his point before rolling a seven, all pass bets are paid. If a seven is rolled first, Don't Pass bets are paid. Thus, a little knowledge of dice probability can help the player lean the odds slightly in his favor. Once all bets are cleared up, and provided that no one has gone bankrupt, a new turn begins.

In writing *Craps*, I have taken much care in structuring it and in separating the individual routines. This will allow you to easily see the "flow" of the program and to understand the logic used in some of the routines. For those of you who are unfamiliar with this version of BASIC, I've outlined the func-

tions of the major commands that I employed frequently in this program.

**LOCATE LL,CCC**

This command places the cursor at screen position LL,CCC where LL is the line number (starting at the top with one), and CCC is the column number (beginning at the left).

**LINE (X1,Y1)-(X2,Y2),C,B**

This command is used to draw both lines and rectangles. In the line drawing mode, X1 and Y1 represent one endpoint of the line, and X2,Y2 the other. C is the color of the line and should be deleted when using a monochrome monitor (be sure to leave the comma in). When a 'B' is specified, a rectangle is drawn with X1,Y1 and X2,Y2 being the vertices of opposite angles.

**CIRCLE (X,Y),R,,,C**

This command draws a circle with center at (X,Y) and radius = R. C is the color of the circle, and again, those with monochrome monitors should delete this. (The commas may also be deleted in this case.)

**STRING\$ (NNN,CCC)**

This will print a string NNN characters long of characters whose ASCII code is CCC. This command is frequently used to clear small portions of the screen using CCC = 32 (ASCII code for a space).

The above commands are shown in their "barest" form, and have many more options available than I've indicated.

The program is broken into 15 sections. The following is a brief overview of each portion, which may be helpful if you

*(Roger Heitzeg is a junior studying electrical engineering at GMI Engineering and Management Institute in Flint, Mich. His computer experience began in 1978 with a TRS-80 Color Computer and in 1980, Roger's entry in the Association for Educational Data Systems annual computer programming contest took first place in the business classification.)*



wish to modify the game. The logic used in some of the sections may also be helpful to you when writing your own games.

### Introduction

As its name implies, this section introduces the game to the player(s), and gives them basic instructions if they request them.

### Initialization

The initialization routine asks how many players will be participating. This value is stored in the variable P, and is checked throughout the game when it is necessary to determine whether a second player is present. It also gives each player \$500 to bet with (B1 and B2), and initializes the values of S1 and S2, which will be used later for recording how a player bet.

### Drawing Of Game Screen

This draws the border, the outline of the dice, and the individual player data areas on the screen. It also accesses the UPDATE VALUES subroutine which prints the present value of each player's account and their current bet (which is zero at the start of the game).

Note that this section is written as a subroutine (*RETURN* in Line 790). This is to allow redrawing of the screen during play in case it somehow gets messed up. (This could happen if a player enters a large bet of 20 digits or so.) This subroutine is initially accessed during the initialization stage, and subsequent accesses are achieved by pressing the Space Bar before the first roll of each turn.

### Entering Of Wagers

Placing of bets is accomplished here. Current bets are stored in W1 and W2. Since the house is stingy and refuses to extend credit, each bet is checked against that player's balance. If the bet is too large, it is cleared from the screen and the game waits for another wager to be entered. At the completion of this, the program accesses the UPDATE VALUES subroutine to display the current information.

### Initial Roll

Since the initial roll and the subsequent rolls (if needed) are so different, I broke them apart into two separate routines. However, both access the same random number generator and dice-graphics routines. The variable X used here is to control the horizontal printing position of the "Press Enter To Roll Dice" message. It switches back and forth between players to give each an equal chance to be in control. (Simply moving this message between player areas is all that is necessary since the computer really doesn't care who presses the Return key.) Note that the computer also looks for the pressing of the Space Bar which will branch to the DRAW GAME SCREEN routine. After accessing the subroutines, which will roll and draw the dice, control returns here with the variable T (for total) holding the sum of the two dice.

The *ON/GOTO* command (Line 1130) branches control to the appropriate routine for the roll. The three possibilities are house wins (Line 1150), house loses (Line 1250), or play continues (Line 1310). The first line number in Line 1130 is a dummy value representing a two die sum of one which is, of course, impossible.

### Payoff For Single Roll Turns

This routine is divided into two sections; house wins and

house loses. In the case of house wins (Lines 1180-1240), the appropriate losing message is loaded into L\$ and then displayed with a "House Wins" message appended to it. The wagers are then subtracted from each player's balance. In the case of the house winning, again a message is displayed and the balances are adjusted accordingly. In both cases, control is transferred to the UPDATE VALUES and BANKRUPTCY CHECK routine and then a new turn is begun.

### Set Point Place Money

The SET POINT PLACE MONEY routine places the value of T into PO for future comparisons (since T will be re-used on the next roll). It then asks each player to place his money on "Pass" or "Don't Pass." The response needed is a simple pressing of the 'P' or 'D' key (upper- or lowercase letters will be accepted). The corresponding message of "Pass" or "Don't Pass" will then be displayed in each player's area. The values of S1 and S2 are set here also with the value zero representing a 'D' and the value one representing a 'P'. These will be used at the end of the turn in determining if a player should be paid or charged.

### Complete Turn

This routine continually loops through the dice clearing, rolling, and drawing subroutines until either a seven or the point is rolled. Control is then transferred to the PAYOFF routine.

### Payoff

The PAYOFF routine begins by immediately branching using an *ON/GOTO* command with S1 (or S2) as the control number (recall that S1 contains the data on how the player bet). The branched-to line then determines if the outcome of the game was as the player predicted and then takes the appropriate action. (For player one, Line 1900 for a Don't Pass bet and Line 1910 for a Pass bet perform this function.) A winning or losing message is then flashed in each player's area and his account is adjusted reflecting his success or lack thereof. The UPDATE VALUES and BANKRUPTCY CHECK routines are then executed, and provided that no one is broke, play resumes with a new turn.

### Clear Dice

After several different experiments as to find the most efficient method to clear the dots off of the dice, I decided to use the *STRING\$* command. The only other semi-feasible way that I came across was to actually redraw each circle using the background color, but this proved to be slower than just simply "blanking out" each die.

### Roll Dice And Branch

This is the place where the random number generator rolls both dice. D1 represents the left die and D2, the right one. This routine calls appropriate subroutines to draw both dice. It also stores the sum of the two in T. Program control then transfers back to the calling routine.

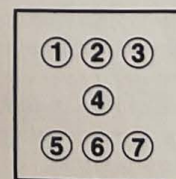


Figure 1



Because several of the dots on a die are used for more than one number (e.g., dot one in Figure 1 is used for a roll of two, three, four, five and six), I chose to give each dot a separate subroutine. This method prevents redundant *CIRCLE* commands that would be present if you were to give each number its own subroutine. The exception to this practice involves dots one and seven, and dots two and six. Since these groups work as a team (e.g., when dot one is on, dot seven will also be on), these can be placed in the same subroutine together.

### Dot Selection

The subroutines in this section are called by the *ROLL DICE* routine. Each line then calls the appropriate subroutine(s) necessary to draw the dots on the dice from the *DRAW DICE* section of the program.

### Dot Drawing

This group of subroutines actually draws the dots on the dice.

### Update Values

This subroutine updates the printed values for each player's balance and current bet which appears in their area on the screen. This is accomplished by simply locating the cursor (via the *LOCATE* command) to the desired position on the screen, and printing the new value.

### Bankruptcy Check

Each player's account is checked here at the end of each turn to ensure that he has money left to continue with. Both players must have money in order for the game to go on. If one player is bankrupt, a message is flashed on the screen indicating this and the game concludes with a farewell message.

### The listing:

```
5 REM arkable program written on April 28,1984 by Roger S. Heitzeg
10 CLS
19 REM note---line 20 should be deleted on non-color machines
20 COLOR 6
30 PRINT
40 PRINT"                C R A P S"
50 PRINT
60 PRINT "Welcome To Vega$"
70 PRINT
80 PRINT "1 Or 2 Can Play"
90 PRINT
100 INPUT "WOULD YOU LIKE INSTRUCTIONS";A$
110 IF LEFT$(A$,1)="n" OR LEFT$(A$,1)="N" THEN CLS: GOTO 430
120 CLS
130 PRINT
140 PRINT
150 PRINT "EACH PLAYER STARTS WITH $500. ANY AMOUNT MAY BE BET ON A GIVEN TURN,"
160 PRINT "PROVIDED OF COURSE, THAT THE BET CAN BE COVERED. PLAYERS EACH TAKE"
170 PRINT "TURNS SHOOTING THE DICE. IF ON THE INITIAL SHOT, A 2, 3, OR 12 IS"
180 PRINT "ROLLED, THE HOUSE WINS, AND A NEW TURN IS STARTED. ON THE OTHER HAND"
190 PRINT "IF A 7 OR 11 IS ROLLED ON THE FIRST SHOT, BOTH PLAYERS WIN, AND "
200 PRINT "AGAIN, A NEW TURN BEGINS."
210 PRINT
220 PRINT "IF ANY OTHER NUMBER IS ROLLED, THAT NUMBER BECOMES THE POINT. THE"
230 PRINT "SHOOTER MUST CONTINUE ROLLING UNTIL EITHER HE ROLLS HIS POINT"
240 PRINT "(PASS), OR ROLLS A 7 (DON'T PASS). BEFORE THE SECOND ROLL OF THE"
250 PRINT "DICE, EACH PLAYER WILL BE ASKED TO PLACE HIS MONEY ON 'PASS', OR"
260 PRINT "'DONT PASS'. IF THE SHOOTER ROLLS HIS POINT, PASS BETS ARE PAID,"
270 PRINT "AND IF A 7 IS ROLLED, DON'T PASS BETS ARE PAID."
280 PRINT
290 PRINT "ONCE ALL BETS ARE PAID (OR COLLECTED), PLAY WILL RESUME WITH A "
300 PRINT "NEW SHOOTER. THE GAME WILL CONTINUE UNTIL EITHER ONE OF THE"
310 PRINT "PLAYERS GOES BROKE"
320 PRINT
330 INPUT "Press Return To Continue";U
340 CLS
350 PRINT:PRINT
360 PRINT"NOTE---TO REDRAW THE SCREEN, PRESS THE SPACE BAR JUST PRIOR TO "
370 PRINT "PRESSING ENTER FOR THE FIRST ROLL OF EACH TURN."
380 PRINT: PRINT
```



```

390 '*****
400 REM
410 REM PROGRAM INITIALIZATION
420 REM
430 INPUT "1 or 2 Players";P
440 IF P<>1 AND P<>2 GOTO 430
450 B1=500:B2=500
460 IF P=1 THEN X=10:ELSE X=50
470 S1=0:S2=0
480 GOSUB 510
490 GOTO 810
500 '*****
510 REM
520 REM DRAWING OF THE GAME SCREEN
530 REM
540 CLS
550 LINE(0,0)-(0,199),3
560 LINE(0,199)-(639,199),3
570 LINE(639,199)-(639,0),3
580 LINE(639,0)-(0,0),3
590 LINE (0,85)-(639,85),3
600 LINE (0,97)-(639,97),3
610 LINE (313,97)-(313,199),3
620 LINE (113,5)-(263,80),7,B
630 LINE (366,5)-(516,80),7,B
640 LOCATE 14,15,0
650 PRINT "Player One"
660 IF P<>2 GOTO 690
670 LOCATE 14,55
680 PRINT "Player Two"
690 LOCATE 16,9
700 PRINT "Current Balance = $"
710 LOCATE 18,9
720 PRINT "Current Bet =      $"
730 IF P<>2 GOTO 780
740 LOCATE 16,49
750 PRINT "Current Balance = $"
760 LOCATE 18,49
770 PRINT "Current Bet =      $"
780 GOSUB 2990
790 RETURN
800 '*****
810 REM
820 REM ENTERING OF WAGERS
830 REM
840 GOSUB 2200
845 S1=0:S2=0
850 LOCATE 12,28
860 PRINT "Place Your Bet -- Player One";
870 LOCATE 18,28
880 INPUT ;W1
890 IF W1<=B1 GOTO 920
900 LOCATE 18,28:PRINT STRING$(12,32):GOTO 870
910 IF W1>B1 GOTO 870
920 IF P<>2 GOTO 990
930 LOCATE 12,53
940 PRINT "Two"
950 LOCATE 18,68

```



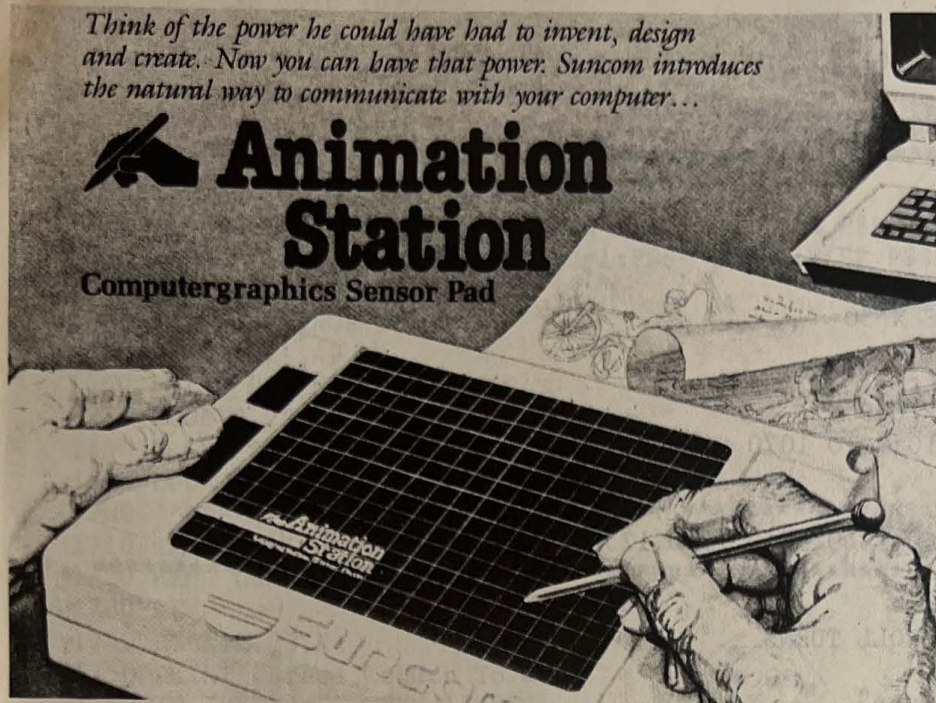


# Create illustrate, calculate.

Think of the power he could have had to invent, design and create. Now you can have that power. Suncom introduces the natural way to communicate with your computer...

## Animation Station

Computergraphics Sensor Pad



Let your imagination take you where no man has gone before. Draw circles around your keyboard. With Animation Station communication with your computer becomes much more natural, much more like real life. In fact, it's downright friendly.

Be entertained while learning about art, architecture, charts, graphs, engineering, graphic design, maps, mathematics, and many other subjects. Have fun by yourself and with friends using graphically interactive game programs.

Replace your paddles, joystick and keyboard with Animation Station's switchable modes. Choose between graphics tablet function or joystick emulator function. It animates the use of your computer... makes it more alive than you ever dreamed possible. Animation Station comes with Grafiti 2.2 and works with Picasso and other fine programs. .... \$99.95

## DISKS

We have been buying, using, and selling disks for over 4 years. Having had this experience, we feel that one disk has proved its superiority: Sentinel disks. Since we sell only Sentinel disks, we can buy thousands of disks a month and get large discounts.

Order a box of our Sentinel diskettes today and try them for 45 days. If you find that they are not the finest disks you've ever used, return them for a full refund; no questions will be asked.

Each Sentinel disk is guaranteed to read and write 100% error free and to perform to your complete satisfaction for as long as you own it. Should a Sentinel disk ever fail, return it to us for a prompt replacement.

These disks are rated double density/double sided. We have even used thousands of them in quad density with no problems; this shows the quality of Sentinel disks.

All of our disks are the same; although, we do package them slightly different for your convenience. The normal disks come with Tyvek sleeves. Deluxe disks come in colored, vinyl sleeves from MichTron with matching labels. The Super Deluxe disks have the colored sleeves and are packed in colored, plastic boxes.

10 Disks — Regular .....	\$19.95
10 Disks — Deluxe .....	\$21.95
10 Disks — Super Deluxe .....	\$23.95
100 Disks — Regular .....	\$170.00
100 Disks — Deluxe .....	\$190.00
<b>Special</b>	
10 Colored Disks .....	\$25.95

## PRINTERS

### SPECIAL:

Quadram or Cannon 8 color ink jet printer with MichTron Freeze Frame. Enables you to print anything on

your screen in beautiful colors and excellent text quality .....	\$825.00
Silver Reed (770) Daisy Wheel - 38 CPS ....	\$849.00
Silver Reed (550) Daisy Wheel - 21 CPS ....	\$679.95
Silver Reed (500) Daisy Wheel - 17 CPS ....	\$465.95
NEC 8023 Dot Matrix .....	\$439.95
Mannesman Tally Spirit Dot Matrix .....	\$319.95

## DISK DRIVES

Double sided TEAC 55B's (40/40) .....	\$199.95
MichTron's DS DOS (with purchase of drive) .....	\$39.95
232 Boards for the SANYO .....	\$99.95
M1-TERM (with purchase of 232) .....	\$59.95
Prometheus 1200 baud modem .....	\$382.95
Volksmodem .....	\$69.95

## DUAL JOYSTICK ADAPTER

This adapter has TWO connectors OUTSIDE THE COMPUTER to let you install or remove joysticks easily. You can even use two joysticks at once for two-player games such as CASHMAN!

..... \$29.95

### RS-232 BOARDS .....

\$89.95  
Give your SANYO a window to the world. An RS-232 board is needed to "talk" to other hardware. With modem, and software like M1-TERM, you can connect with special news services, or even your friends!

### Hayes Joysticks

The Ultimate In Joysticks — (3 fire buttons) MACH III  
..... 29.95

HURON SYSTEMS • 4217 M-59 • Suite 310 • Pontiac, Michigan 48054

(313) 683-1447

(VISA & MASTER CHARGE OK. ADD \$3.00 FOR POSTAGE AND HANDLING IN U.S.A.)



```

960 INPUT W2
970 IF W2<=B2 GOTO 990
980 LOCATE 18,68:PRINT STRING$(12,32):GOTO 950
990 GOSUB 2990
1000 LOCATE 12,2:PRINT STRING$(75,32)
1010 '*****
1020 REM
1030 REM INITIAL ROLL
1040 REM
1050 IF P<>2 GOTO 1070
1060 IF X<>10 THEN X=10:ELSE X=50
1070 LOCATE 23,X
1080 PRINT "press return to roll"
1090 J$=INKEY$:IF J$=""THEN 1090
1100 IF J$=" " THEN GOSUB 510:GOTO 1070
1110 GOSUB 2200
1120 GOSUB 2300
1130 ON T GOTO 1150,1150,1150,1340,1340,1340,1250,1340,1340,1340,1250,1150
1140 '*****
1150 REM
1160 REM PAYOFF FOR SINGLE-ROLL TURNS
1170 REM
1180 IF T=2 THEN L$="Snake Eyes"
1190 IF T=3 THEN L$="Cock Eyes"
1200 IF T=12 THEN L$="Box Cars"
1210 LOCATE 12,28
1220 PRINT L$;" -- House Wins"
1230 B1=B1-W1:B2=B2-W2
1240 GOTO 1280
1250 LOCATE 12,28
1260 PRINT "A Natural -- House Loses"
1270 B1=B1+W1:B2=B2+W2
1280 W1=0:W2=0
1290 GOSUB 2990
1300 FOR D=1 TO 5000:NEXT
1310 GOSUB 3240
1320 GOTO 810
1330 '*****
1340 REM
1350 REM SETS POINT, PLACES MONEY
1360 REM
1370 LOCATE 12,35
1380 PO=T
1390 PRINT "point =";T
1400 LOCATE 19,9
1410 PRINT"Where's Your Money?"
1420 LOCATE 21,9
1430 PRINT "Pass (p)"
1440 LOCATE 22,9
1450 PRINT "Don't Pass (d)";
1460 P$=INKEY$:IF P$="p" OR P$="d" OR P$="D" OR P$="P" THEN 1470:ELSE 1460
1470 IF P$="p" OR P$="P" THEN S1=1:P$="Pass":ELSE P$="Don't Pass"
1480 LOCATE 19,9
1490 PRINT STRING$(25,32)
1500 LOCATE 21,9
1510 PRINT STRING$(6,32);P$
1520 LOCATE 22,9
1530 PRINT STRING$(20,32)

```



```

1540 IF P<>2 GOTO 1690
1550 LOCATE 19,49
1560 PRINT "Where's Your Money?"
1570 LOCATE 21,49
1580 PRINT "Pass (p)"
1590 LOCATE 22,49
1600 PRINT "Don't Pass (d)"
1610 P$=INKEY$:IF P$="p" OR P$="d" OR P$="P" OR P$="D" THEN 1620:ELSE 1610
1620 IF P$="p" OR P$="P" THEN S2=1:PS$="Pass":ELSE PS$="Don't Pass"
1630 LOCATE 19,49
1640 PRINT STRING$(25,32)
1650 LOCATE 21,49
1660 PRINT STRING$(5,32);PS$
1670 LOCATE 22,49
1680 PRINT STRING$(15,32)
1690 LOCATE 23,X
1700 '*****
1710 REM
1720 REM COMPLETE TURN
1730 REM
1740 LOCATE 23,X
1750 PRINT "Press Return To Roll"
1760 IF INKEY$="" THEN 1760
1770 GOSUB 2170
1780 GOSUB 2300
1790 IF T=PO OR T=7 THEN 1820
1800 GOTO 1740
1810 '*****

```



### 10 Meg Internal Hard Drive

Now a special 10 meg hard drive that fits completely inside your Sanyo 550. It comes complete with new power supply, cables, interface and operating system  
..... \$1499.95

### Dual Joystick Adapter

This little gem plugs into the joystick port inside the computer and then it attaches to the outside rear of your computer. You can then insert one or two joysticks into the adapter. If you have to move the computer you may easily remove the joysticks without opening it. Now you can play two player games that require two joysticks like MICHTRON'S CASHMAN.. \$29.95

### RS-232 Serial Boards

We have a replacement for the elusive SANYO RS-232 board. You need a RS-232 board in order to communicate with other computers via modem or to use a serial printer.

SHIPPED FROM STOCK ..... \$89.95

## TELEPHONE or MAIL ORDER ONLY!

Huron Systems  
4217 M-59  
Suite 310  
Pontiac, MI 48054  
Phone (313) 683-1447

## DEALERS ONLY!

IBM PC™ Compatible



SANYO

Business Computer System

### STANDARD FEATURES:

- MS DOS
- 16 Bit 8088 CPU
- SANYO BASIC
- 128K Internal Memory
- Centronics Printer Port
- Color Graphic Capabilities
- Diagnostics, Utilities, Speaker & Joystick Port



**CALL FOR  
PRICING!**

### MBC 550

- 1 single sided/double density disk drive (160K)
- WordStar & CalcStar Included

RETAIL-\$999.00

### MBC 555

- 2 single sided/double density disk drives (320K)
- 128K memory expandable to 256K
- WordStar, CalcStar, DataStar, InfoStar, & MailMerge Included

Also available in double sided drives



MICRO-EQUIP-CORP

**MICRO EQUIPMENT  
CORPORATION**

245 West Wieuca Rd.  
Suite 210  
Atlanta, Ga. 30342

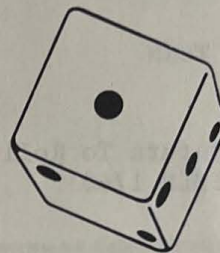
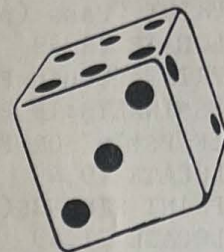
**404/843-3128**



```

1820 REM
1830 REM  PAYOFF
1840 REM
1850 LOCATE 21,9
1860 PRINT STRING$(16,32)
1870 LOCATE 21,49
1880 PRINT STRING$(16,32)
1890 ON S1+1 GOTO 1900,1910
1900 IF T=7 THEN 1920:ELSE GOTO 1930
1910 IF T=PO THEN 1920:ELSE GOTO 1930
1920 B1=B1+W1:ET$="Win":GOTO 1940
1930 B1=B1-W1:ET$="Lose"
1940 ON S2+1 GOTO 1950,1960
1950 IF T=7 GOTO 1970:ELSE GOTO 1980
1960 IF T=PO GOTO 1970:ELSE GOTO 1980
1970 B2=B2+W2:ES$="win":GOTO 1990
1980 B2=B2-W2:ES$="lose"
1990 FOR Y=1 TO 3
2000 LOCATE 21,16
2010 PRINT "You ";ET$
2020 IF P<>2 GOTO 2050
2030 LOCATE 21,56
2040 PRINT "You ";ES$
2050 FOR D=1 TO 600:NEXT
2060 LOCATE 21,16
2070 PRINT STRING$(8,32)
2080 LOCATE 21,56
2090 PRINT STRING$(8,32)
2100 FOR D=1 TO 600:NEXT
2110 NEXT
2120 W1=0:W2=0
2130 GOSUB 2990
2140 GOSUB 3240
2150 GOTO 810
2160 '*****
2170 REM
2180 REM  CLEAR DICE FOR NEXT ROLL
2190 REM
2200 LOCATE 23,X
2210 PRINT STRING$(20,32)
2220 FOR J=16 TO 50 STEP 32
2230 FOR K=2 TO 10
2240 LOCATE K,J
2250 PRINT STRING$(17,32)
2260 NEXT
2270 NEXT
2280 RETURN
2290 '*****
2300 REM
2310 REM  ROLLS DICE AND BRANCHES TO APPROPRIATE SELECTION ROUTINE
2320 REM
2330 D1=INT (RND*6+1):D2=INT (RND*6+1)
2340 ON D1 GOSUB 2390,2440,2460,2480,2500,2520
2350 ON D2 GOSUB 2540,2560,2580,2600,2620,2640
2360 T=D1+D2
2370 RETURN
2380 '*****
2390 REM
2400 REM  DOT SELECTING ROUTINES--BRANCHES CONTROL TO DOT DRAWING ROUTINE

```





```

2410 REM
2420 GOSUB 2790
2430 RETURN
2440 GOSUB 2710
2450 RETURN
2460 GOSUB 2710:GOSUB 2790
2470 RETURN
2480 GOSUB 2710:GOSUB 2770:GOSUB 2810
2490 RETURN
2500 GOSUB 2710:GOSUB 2770:GOSUB 2810:GOSUB 2790
2510 RETURN
2520 GOSUB 2710:GOSUB 2770:GOSUB 2810:GOSUB 2740
2530 RETURN
2540 GOSUB 2940
2550 RETURN
2560 GOSUB 2860
2570 RETURN
2580 GOSUB 2860:GOSUB 2940
2590 RETURN
2600 GOSUB 2860:GOSUB 2920:GOSUB 2960
2610 RETURN
2620 GOSUB 2860:GOSUB 2920:GOSUB 2960:GOSUB 2940
2630 RETURN
2640 GOSUB 2860:GOSUB 2920:GOSUB 2960:GOSUB 2890
2650 RETURN
2660 '*****
2670 REM
2680 REM DOT DRAWING ROUTINE--
2690 REM left die
2700 REM
2710 CIRCLE (143,19),20,,,7
2720 CIRCLE (233,65),20,,,7
2730 RETURN
2740 CIRCLE (188,19),20,,,7
2750 CIRCLE (188,65),20,,,7
2760 RETURN
2770 CIRCLE (233,19),20,,,7
2780 RETURN
2790 CIRCLE (188,42),20,,,7
2800 RETURN
2810 CIRCLE (143,65),20,,,7
2820 RETURN
2830 REM
2840 REM right die
2850 REM
2860 CIRCLE (396,19),20,,,7
2870 CIRCLE (486,65),20,,,7
2880 RETURN
2890 CIRCLE (441,19),20,,,7
2900 CIRCLE (441,65),20,,,7
2910 RETURN
2920 CIRCLE (486,19),20,,,7
2930 RETURN
2940 CIRCLE (441,42),20,,,7
2950 RETURN
2960 CIRCLE (396,65),20,,,7
2970 RETURN
2980 '*****
2990 REM

```

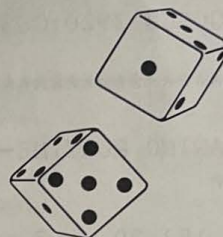




```

3000 REM PRINTS UPDATED VALUES FOR BALANCE AND CURRENT BET
3010 REM
3020 LOCATE 16,28
3030 PRINT STRING$(11,32)
3040 LOCATE 16,29
3050 PRINT B1
3060 LOCATE 18,28
3070 PRINT STRING$(11,32)
3080 LOCATE 18,29
3090 PRINT W1
3100 IF P<>2 GOTO 3190
3110 LOCATE 16,68
3120 PRINT STRING$(11,32)
3130 LOCATE 16,69
3140 PRINT B2
3150 LOCATE 18,68
3160 PRINT STRING$(11,32)
3170 LOCATE 18,69
3180 PRINT W2
3190 RETURN
3200 '*****
3210 REM
3220 REM BANKRUPTCY CHECK
3230 REM
3240 IF B1<>0 AND B2<>0 THEN RETURN
3250 IF B2=0 GOTO 3270
3260 E$="One":X=9:GOTO 3280
3270 E$="Two":X=49
3280 FOR Y=1 TO 5
3290 LOCATE 23,X
3300 PRINT STRING$(23,32)
3310 FOR D=1 TO 600:NEXT
3320 LOCATE 23,X
3330 PRINT "Player ";E$;" Is Bankrupt"
3340 FOR D=1 TO 600:NEXT
3350 NEXT
3360 LOCATE 12,31
3370 PRINT "Thanks For Playing"
3380 GOTO 3380
3390 '*****

```



### Exciting New Software For Sanyo 550/555

**PICTURE PURRFECT** - A speedy machine language hi-res screen dump used to dump graphic information from your screen to your printer. Available for the following printers: Okidata 92 / 93, Prowriter 8510 / Nec 8023A, Epson MX-80 w / grafrax, and others soon. \$29.95. First 1000 will receive several hi-res pictures free!

**GAMES DISK #1** - A variety of exciting and challenging games which utilize the graphics, sound, and joystick or keyboard capabilities of your Sanyo, all for \$19.95.

COMING SOON - **PURRFECT ARTIST**. Shipping & Handling: Add \$3.00. NC residents add Sales Tax. Dealer Inquiries Invited. Send Check or Money Order to:

I & L Ltd.  
67 Burris Place  
Chapel Hill, NC 27514  
(919)-929-2483



# Four Reasons Why J&M Systems is the Leader in Sanyo Peripherals and Upgrades



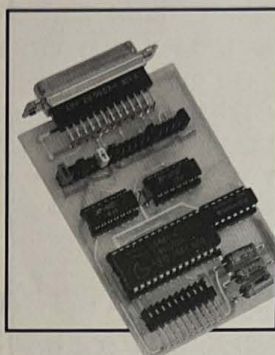
## 1. Memory Minder®

The most advanced disk drive analysis program available. Memory Minder can check and **correct** most disk drive problems **before** they cause data loss and down time. Includes two disks and easy-to-follow instruction manual. Only \$99.



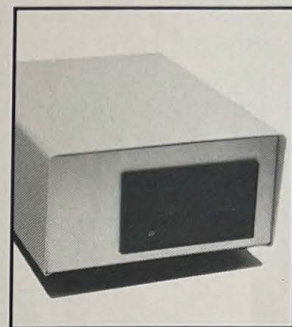
## 2. Drive Upgrade Kit

This kit allows you to upgrade your 160k disk drives to 360k capacity. You receive 2 disk drives, DS DOS\* operating system, and installation instructions. The upgraded drives will open the door to more IBM software. \$384 for either the 550 or 555.



## 3. RS-232 Board

Our board is better than "Sanyo compatible." With the J&M Systems RS-232, you can fully configure I/O lines to match your system needs. Buy our board for the same price as theirs and receive extra configuration ability **FREE!** Just \$99.



## 4. 5Mbyte Hard Drive

5Mbyte capacity hard disk drive complete with manual, host adapter and software. Installs in minutes. Only \$995. While supplies last! 10 and 15 Mbyte drives also available.

\*DS DOS is a registered trademark of MichTron

To order, fill out this coupon or call (505/265-1501).

I'd like more information on these products:

☐ Memory Minder ☐ Drive Upgrade ☐ RS-232 ☐ 5Mbyte Hard Disk

Send me the following:

Qty.	Item	Unit Price	Total
_____	Memory Minder	\$ 99	_____
_____	Drive Upgrade	\$384	_____
_____	RS-232 Board	\$ 99	_____
_____	5Mbyte Hard Disk	\$995	_____

Name \_\_\_\_\_

Address \_\_\_\_\_

City \_\_\_\_\_

State \_\_\_\_\_ Zip \_\_\_\_\_

For those ordering with MC or Visa:

Card # \_\_\_\_\_ Exp. date \_\_\_\_\_

Signature \_\_\_\_\_

**J & M SYSTEMS, LTD.**

**137 UTAH NE  
ALBUQUERQUE, N.M. 87108  
505/265-1501**

SS 8/84



# INPUT / OUTPUT

By Tim Purves

**Q.** *Why is it that, when I save a program in Sanyo BASIC and get a disk full error, I can't just insert another disk and save it again without getting another disk-full error? Even on an empty disk!*

**A.** The problem is a result of a minor bug in Sanyo BASIC that improperly handles a disk-full error. However, by issuing the command *RESET* before saving the file again, you can recover from this error. Also note that when Sanyo BASIC saves a program, it first checks to see if the program exists already; if it does, it renames the file to "FILE NAME.\*\*\*" and proceeds to save the new file. If all is well at the end of the save, Sanyo BASIC erases the temporary file.

**Q.** *The other night I was killing files from Sanyo BASIC under program control, and I issued the command KILL A\$. However, A\$ was not defined or equal to " ". When I returned to DOS there was nothing on the disk. What happened?*

**A.** This appears to be the equivalent to *DEL \*.\** in DOS without the "ARE YOU SURE (Y/N)?" message. It's hard to tell if this is the desired function or a bug in Sanyo BASIC.

*(Tim Purves is an expert on the Sanyo 550 series. He can program in assembly code, PASCAL, C and BASIC. This first column is composed of questions that have been asked of him over the first few months of the Sanyo's existence. Many of the minor bugs may well be fixed in the versions of the DOS now being sold. But these Q's and A's will help the many of you who still may have the original DOS.)*

**Q.** *I have seen several advertisements for RAM disk software. What is it and is it worthwhile?*

**A.** A RAM disk is really software that uses part of a system's memory to emulate a disk drive. Typically, RAM disk software allows you to set up the memory used in 1024 byte (1K) increments. RAM disk software I have seen for the Sanyo is very good, allowing you to specify from 32K to 128K of memory to be used as an "electronic" disk. I personally use RAM disk software when using *WordStar*, and find that it speeds up the operation tremendously. As an example of the speed increase: BASIC (when loaded from the floppy) takes about 10 seconds, the hard drive about four seconds, and from the RAM disk about one second. One of the drawbacks of the RAM disk is that when the power is turned off you lose whatever data was stored there. So, you must backup to floppies or to your hard drive before turning off the power.

**Q.** *Why is the Sanyo screen display slow compared to other computers?*

**A.** The Sanyo uses a bit-mapped screen, and characters are plotted on the screen as graphics. This method allows text and graphics to be on the screen at the same time. With the bit-mapped feature you can use the symbol command in BASIC and you can compose your own character set. And then with the Sanyo you always have color graphics even if you are only using a monochrome monitor. When the screen on the Sanyo scrolls, you are actually moving three screens: a red screen, a blue screen and a green screen. You are moving 48K worth of memory, and this is more than some computers even have.

**Q.** *I was editing a program in Sanyo BASIC and the screen filled with garbage and the computer locked up. What happened and how can I keep it from happening again?*

**A.** This is caused when the last line on the screen is pushed off the bottom of the screen after a large amount of insertion. About the only way to prevent this from happening is for Sanyo to correct the problem or to refrain from large amounts of insertions at any one time.

**Q.** *When I do a directory from DOS, if the disk contains more than 24 files the first few files scroll off the screen faster than I can read them. How can I stop this?*

**A.** The *DIR* command has two little-known options: */W* and */P*. The */W* option causes the *DIR* command to display the files five per line. The */P* option causes the display to pause when the screen is full, waiting for the user to press a key to continue. For example, *DIR B:/P*.





# INTELLICOM

## MAKES YOUR COMMUNICATIONS EASY

NOW AVAILABLE FOR THE SANYO 550/555 COMPUTER, Intellicom allows you to "reach out" and tap the tremendous number of information data bases available within easy reach of your telephone. Information services such as The Source, CompuServe, Dow Jones and Newsnet can easily be accessed. Communicate with your office mainframe and transfer files while in the comfort of your home. Check into remote bulletin board systems and download free public domain software. Send and receive electronic mail. The list of possibilities is limited only by your imagination. Intellicom provides the INTELLIgent COMMunications program your Sanyo needs.

**INTELLICOM IS EASY TO INSTALL  
INTELLICOM IS EASY TO USE  
INTELLICOM COMES WITH A COMPREHENSIVE MANUAL**

## INTELLICOM OFFERS THE FOLLOWING FEATURES

300 OR 1200 BAUD OPERATION  
MENU DRIVEN  
TERMINAL EMULATION  
TRANSMIT AND RECEIVE FILES  
AUTODIALING FROM DIRECTORIES  
COMPUERVE EXECUTIVE TERMINAL  
XMODEM ERROR CHECKING PROTOCOL

SIMULTANEOUS PRINTER OPERATION  
DATA CAPTURE TO DISK  
INSTALL PROGRAM INCLUDED  
HAYES MODEM SUPPORT  
TONE OR PULSE DIALING  
HOST SUPPORT CODE INCLUDED  
AVAILABLE ON MANY OHTER MICROS

**Additionally, SETUP, a port configuring utility, is included which may be used to configure the RS 232 port for any other purpose.**

**INTELLICOM is priced at only \$69.95**

Order INTELLICOM from your local Sanyo dealer or direct from:

## THE COMPUTER TOOLBOX

1325 East Main Street — Waterbury, Conn. 06705  
Telephone (203) 754-4197



# NOW. SANYO POWER.



## The MBC 550 Series

Monitor Optional

The MBC 550 Series are high performance, MS-DOS, 16 bit personal computers with color graphics and up to 256K RAM expandability. Available with either 160K or 360K drive(s).

All models come with MS-DOS, Basic, WordStar®, CalcStar®, EasyWriter I™. Dual drive models come with additional IUS or MicroPro® bundled software. And, the powerful operating system allows you to run many of the IBM PC business software programs. All for a price that can't be beat.

If your needs are for word processing, accounting, spreadsheets, data base management, advanced integrated programs, or home and educational applications, experience the power of the Sanyo MBC 550 series now.



# SANYO

COMPUTER DIVISION

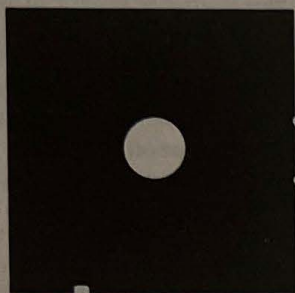
## SANYO BUSINESS SYSTEMS CORP.

51 Joseph Street, Moonachie, N.J. 07074

**YOU'LL FIND OUR NAME EVERYWHERE.**



# SOFT TALK



## LETTER WRITING MADE EASY.

The Delta Point Corporation has announced the release of *The Business Letter Library*, a collection of hundreds of model business letters on disks, ready for use with a microcomputer and word processing program. The samples were written by Dr. William Himstreet, former professor of business communications at the University of Southern California and author of the college text, *Business Communications*.

*The Business Letter Library* features a wide variety of business letters including letters for sales, acknowledgements, memoranda, complaint letters, thank you notes, credit or collection letters and others. The various letters are located by a menu-driven search program feature. For routine correspondence, a user can make quick changes to one of the standard letters or use an on-screen guide to write a custom, personalized version of each letter.

For more information, write to Delta Point Corporation, 711 West 17th Street, B-10, Costa Mesa, CA 92627; or call (714) 642-1827.

\* \* \*

**A PORTABLE PRINTER** has been introduced into the market by DataPort, a subsidiary of Central Stationers, Inc. This letter-quality, 96-character printer is only two-inches thick and

weighs less than five pounds. It features the Elite 12 character font, uses standard typewriter paper, and interfaces via a standard (Centronics compatible) parallel port. The printing speed is 15 characters per second with a maximum column width of 80 characters.

The DataPort electronic printer is available for \$295 from DataPort, Computer Products Research Facility, 5525 Olinda Road, Bldg. A, El Sobrante, CA 94803; phone (415) 223-3658.

\* \* \*

**LIGHTNING MAIL.** A new electronic mail software product is being offered for the Sanyo-MBC 550 series by Omni Computer Systems. *FLASH-COM* comes with several modules including its own word/text processing module, forms/screen file management, mailing list manager, and communication module. It also contains a tutorial and dozens of standard business letters and forms ready to be used. It interfaces with applications written with *Lotus 1-2-3*, *dBASE II*, *PFS:File*, *Volkswriter*, *Perfect Writer*, *Perfect Calc*, *MultiMate*, *WordPlus*, and others, and it operates with more than a dozen modems currently available.

*FLASH-COM* is priced at \$299 and interfaces with the U.S. Postal Service's E-COM service. For more information about the package, write to Omni Computer Systems Inc., P.O. Box 162, Chestnut Hill, MA 02167; or call 1-800-525-1055, (617) 277-2962 in Mass.

\* \* \*

**A SANYO BULLETIN BOARD** is now available to the New York community computer users. The Sanyo Electronic Bulletin Board (SEBB) is sponsored by the N.Y. Sanyo Users Group

*The following products are currently available for the Sanyo 550 series computers and will be reviewed in a future issue of Soft Sector.*

and promoted by the Computer Alpha Corporation. The SEBB is available 24 hours a day and offers a forum for exchanging ideas, participating in debates, and socializing with other Sanyo users.

In addition to the features common to all BBSs, the Sanyo EBB offers: a Swapping/Bartering section for exchanging books, records, furniture, services, etc.; a section with public domain software available for downloading; a "For Dealers Only" section which can only be accessed by dealers for exchanging information; and a "Weekly Poll" section in which users will be polled on different topics. Suggestions and answers to technical questions are provided by other members, most relating to the Sanyo 550/555, 1000, 2000 and 4000 models.

The Sanyo EBB is available for 300 and 1200 Baud transmissions at (212) 596-5802. A password is needed to log on; temporary passwords are issued for three days and until the membership application is processed by calling (212) 855-9029. The membership fee is \$3 per month, payable in an annual membership fee of \$36.

\* \* \*

**FIVE IN ONE.** An integrated software package has been introduced by Computer Creations Inc. that will run on the Sanyo 550 series computers. *The Ultimate* includes a word processor, a dictionary, a database manager, a mail merger, and an electronic mail connection. Taken separately, their features include:

1) **WORD** — a word processor designed to produce book length documents as well as single page letters. It has many features including being menu driven, complete cursor movement, foot-



noting, global search and replace, justification, word wrap, tabs, page numbering and others.

2) **SPELL** — a dictionary/spelling checker with more than 13,000 words. The user may add customized words, delete words, and print out a hard copy of the entire dictionary. The size of the dictionary is constrained only by the diskette capacity.

3) **BASE** — a database manager that uses record formats generated in the word processor. Data is entered about a person, place or thing and the information is filed away for you to extract in a variety of output formats. The output may be columnized, forms can be filled in, or almost any other output.

4) **MAIL** — a mail merger that can use form letters designed in the word processor and selected records from the database manager to provide individualized letters as an output from the printer. Fields can be added, lengthened, or reorganized by creating a new database file from the existing file.

5) **Z-COM** — an electronic mail connection which can send personalized letters, memos and invoices anywhere in the country within 48 hours.

*The Ultimate* requires at least 96K of

RAM, DOS 1.1 or 2.0, and either two 160K drives or one 320K drive. For **Z-COM**, a modem capable of a Bell 103 or 212A specification is required. The package has a suggested retail price of \$249.50 and is available from Computer Creations, Inc., 766 El Camino Real, San Carlos, CA 94070; phone (415) 595-4466.

\* \* \*

**A COMMUNICATIONS PACKAGE** for the Sanyo 550/555 is now being offered by the U.S. Digital Corporation. **COPYLINK** provides access to information and TELEX networks, time sharing systems and bulletin boards via 300 and 1200 Baud modems of all types. The program also provides for data transfers between the 550/555 and some 35 dissimilar types of CP/M-80 and MS-DOS computers, including the Sanyo MBC-1100 and 1200 series.

Some of the features of **COPYLINK** include: compatibility with the XMODEM protocol; the ability to receive more than one disk of data; help messages at every level of operation; file handling without returning to the operating system; filtering out undesired control characters; user-defined parameters; computer control from a remote site; an audible prompt to signal an

error condition; XON/XOFF support; display of received control characters; true full and half duplex; display of previous file transfers; off-line data preparation; and null modem (direct wire) transfers to 19,200 Baud.

**COPYLINK** sells for \$99.95 through the dealer network. For more information, contact Paul D. O'Brien, V.P.-Sales, U.S. Digital Corporation, 5699-D S.E. International Way, Milwaukie, OR 97222; phone (503) 654-0668.

\* \* \*

**REDEFINING BASIC KEYWORDS** can now be accomplished with **KEYWORD**, a BASIC utility offered by Michigan Software Distributors Inc. As you know, the Sanyo MBC series of computers using Sanyo BASIC offer the capability to enter certain BASIC commands with the CONTROL or shifted CONTROL key and another letter. **KEYWORD** allows you to change the default words to words of your own choosing. It is menu driven and will write your selection of commands into the copy of Sanyo BASIC on the disk.

For more information or to order a copy for the price of \$9.95, contact Michigan Software Distributors Inc., 43345 Grand River, Novi, MI 48050; phone (313) 348-4477.

\* \* \*

#### TRS-80 TO SANYO TRANSFER.

Now, disk files can be transferred between the TRS-80 Models I, III and 4 and MS-DOS-based computers such as the Sanyo 550/555, IBM, etc. **Transfer** is a menu-driven utility designed for use on a TRS-80 Model I/III/4 that can transfer files, format an MS-DOS diskette, and sort an MS-DOS directory for use on the Sanyo BASIC Programs, word processor forms and any ASCII files can be transferred. The **Transfer** package also includes a **CONV** (convert) program that will change Model I/III/4 BASIC programs to conform to the Microsoft BASIC language, inserting spaces around key words, or "tokens." The **CONV** program does not translate the program contents (change **LOCATE** to **PRINT @**, etc.).

**Transfer** can read and write to MS-DOS Version 1.0 compatible disks. It does not function with MS-DOS 2.0 disks. But the MS-DOS 2.0 disks *can* read and write to the 1.0 disks, so that transferred files are indirectly compatible.

**Transfer** requires a TRS-80 Model I/III/4 with 48K and two double density drives (Model I users must use

## **\$195. EASY/INFO™**

**Turns your SANYO Computer into a HIGH-PERFORMANCE COMPUTER SYSTEM**

**New 4th Generation Automatic Screen, Program and Report Generator for Sanyo Computer Users.**

- Designed for **SANYO** Computers (Models 550-555 and new series -2)
- Quick and easy for you to design and create new applications on your computer.
- Non-technical users can start using it without formal training.
- Main menu of capabilities guides you step by step in developing new uses for your computer
- Allows you to print customized reports from your data base, within minutes.

**The ultimate application program generator for SANYO computers. Will handle all your filing and data-management needs such as:**

- |                   |                        |                  |                 |
|-------------------|------------------------|------------------|-----------------|
| • Medical Records | • Accounts Payables    | • Inventory      | • Budgets       |
| • Payroll         | • Accounts Receivables | • Family Finance | • Mailing Lists |
| • School Records  | • Checkbook Balancing  | • Events         | • Appointments  |
| • Reminders       | • Record your Thoughts | • Write Letters  | • Write Memos   |

#### **MEGA/NET™ CORPORATION**

806 Route 17, Ramsey, N.J. 07446  
(201) 825-7770 Telex: 469010  
Distributor • Dealer Inquiries Welcomed



\*Trademark of:

**SANYO**  
SANYO BUSINESS SYSTEMS CORPORATION  
51 Joseph Street, Moonachie, New Jersey 07074



doublers), and at least one drive must have 40-track capacity to read MS-DOS disks (35-track drives can be used, but the last five tracks of data will be lost). The current price for the program is \$59.95. For more information, contact MichTron, 6655 Highland Road, Pontiac, MI 48054; phone (313) 666-4800.

\*\*\*

**SPELLING MADE SIMPLE.** *ProofReader* is a 32,000 word dictionary program being offered by Wang Electronic Publishing Inc. It occupies 120K of disk space and requires two disk drives. When used in conjunction with a word processing program such as *WordStar* or *Easy Writer I*, *ProofReader* will sort the text, display the number of unique words encountered, and check them against the 32,000 dictionary entries. Additionally, the program supports an auxiliary dictionary which can be built by the user and then later added to the main dictionary.

*ProofReader* sells for \$50 and is available through Wang Electronic Publishing Inc., P.O. Box 367, Tigras, NM 87059; phone (505) 281-3371.

\*\*\*

**DATA MANAGEMENT** on the Sanyo is being offered by EWDP Software Inc. with their database software package, *Filebase*. In addition to the features common to most database programs, such as alphabetical field sorts and single record searches, *Filebase* includes the capability to merge and sort two files simultaneously and several unique printing features. It is fully menu-driven, prevents the overwriting of files, and includes error trapping with immediate feedback to unacceptable responses.

*Filebase* is priced at \$100 and includes a program tutorial. For more information or to order, contact EWDP Software Inc., P.O. Box 40283, Indianapolis, IN 46240.

\*\*\*

**IT'S A BIRD, IT'S A PLANE** — no, it's *Mighty Mail*, the latest addition to MichTron's line of programs for the Sanyo 550/555. Written by Tim Purves, the author of DS-DOS, this mailing list manager features a user-definable sorting routine in which you can define any method of priority for sorting records. It also features 27 special flags which can be used to include or exclude certain records when processing special reports. This feature can be useful for making

lists of customers with delinquent accounts or those with interests in special products or services. Another feature is its ability to handle extremely large files; the number of records which can be processed is limited only by the available disk space.

*Mighty Mail* is presently priced at \$99.95 and requires 128K of RAM. If you're interested, contact MichTron, 6655 Highland Road, Pontiac, MI 48054; phone (313) 666-4800.

\*\*\*

**IT'S BACK TO SCHOOL** with the geography program, *U.S. Capitals and States*, being marketed by Michigan Software. This program uses high-resolution graphics and either keyboard or joystick control to teach both young and old the names and locations of the 50 states of the Union and their capitals. For \$29.92, *U.S. Capitals and States* is available from Michigan Software, 43345 Grand River, Novi, MI 48050; phone (313) 348-4477.

\*\*\*

**REDEFINING FUNCTION KEYS** and the ability to permanently store the changes to the *BASIC.EXE* program is the capability offered by *PFKEY*, a new BASIC program being marketed by Michigan Software. This alleviates the need to re-type the user-selected functions each time BASIC is loaded. *PFKEY* is being sold for \$9.95 and can be ordered from Michigan Software Distributors Inc., 43345 Grand River, Novi, MI 48050; phone (313) 348-4477.

\*\*\*

**SINGLE-STROKE SCREEN DUMPS** are now possible with the introduction of *PrintScreen550*, the first software release from Apollo Optics & Kinematics, Inc. *PrintScreen550* will dump a screen of text or graphics with a single keystroke to the following printers: Okidata 92P, Gemini 10x, Epson, Manesmann Tally Spirit 80, and Panasonic 1090 and 1091. For printers with less than 640 horizontal dots, the program allows the screen to be rotated for a full-size perpendicular printout. It works in DOS, BASIC and other languages, and all software packages that run on the Sanyo.

*PrintScreen550* sells for \$45 and is backed by an enhancement policy. For more information, contact Apollo Optics & Kinematics, Inc., P.O. Box 604, Silver Springs, MD 20901; phone (301) 588-8446.



## SANYO CITY Service & Sales

(305) 692-2455 (305) 335-5489  
COMPUTERS W/SOFT. \$

550 (1 160K)	745.00
555 (2 160K)	1045.00
555-2 (2 320K)	1206.00
555-3 (2 640K)	1845.00
Portable 555-2P	1895.00
160K drive	149.00
160K drive w/soft	295.00
320K drive w/soft	425.00
640K drive w/soft	495.00
RS-232C 550	75.00
Memory 128K 550	110.00
Auto modem 550	145.00
Telephone Kit 550	345.00
Joystick 550	39.00
550 Intro tape	49.95

### MONITORS complete for 550

12" hi-res green	99.00
9" hi-res green	85.00
12" RGB color	495.00

### BUSINESS COMPUTERS

1100 (1 320K)	1178.00
1150 (2 320K)	1427.00
4000 (1 640K)	1489.00
4050 (2 640K)	1798.00
Hard Drives	CALL
Standby Power UPS	365.00

### PRINTERS config. for Sanyo

Okidata 82A	299.00
83A	535.00
92P	409.00
93P	645.00
84P	770.00
Toshiba 1340	750.00
1351	1250.00
Sanyo PR-5000	451.00
PR-5500	657.00
Silver Reed 400	340.00
500	385.00
550	480.00
770	815.00
Abati LQ-20	389.00
Juki 6100	419.00
Printer Cable	28.00

### SOFTWARE \*Send for list\*

LOTUS 1-2-3	350.00
dBASE II	475.00
Multiplan	170.00
Personal Pearl	234.50
Accting System	395.00
Accting Pearl	595.00
Practical Acct.	104.50
Super Draw (550)	69.95
CP/M Emul. (550)	89.00
Radio Shack Emul.	59.97
Copylink (Modem)	89.00
SanyoCom software)	85.00
Flight Simulator	45.00
Solitaire	31.00

Add 3% for Visa/MC  
Cashiers Check, Money Order, Wire Transfer  
accepted. No COD. Shipping/handling Addi-  
tional charge.

1708 N.W. FEDERAL HIGHWAY  
Stuart, Florida 33494

(305) 692-2455 (305) 335-5489





MICHTRON is one of the largest suppliers of software for the SANYO MBC-550 series of computers. We purchased one of the first SANYO 550's shipped to the US and fell in love with it. Many of our programmers who have had experience on other computers rewrote their favorite programs to run on the SANYO. Some of our products are advertised in this new magazine.

If you would like a complete catalog please write or call and we will be glad to send you one. Our products are also carried by many Sanyo Dealers and Distributors. Ask your dealer for a demonstration of our outstanding programs. We are also coming out with many new programs for the 550.

MICHTRON is a mixture of full time and free lance programmers. We are always looking for new programs to market. If you are writing software for the SANYO 550 series we would be interested in helping you market your programs. Write or call for our special prices and versions of BASIC and C COMPILERS, Assemblers, Disk Modification Utilities, MS-DOS version 1.25 modified for double and single sided drives and 8 or 9 sectors (320K or 360K per disk) and other programming aids.

## MI-TERM

MichTron's Intelligent Terminal program will set your computer free! MI-TERM is THE complete communications program. It has every function you'll ever need from a terminal: featuring full up- and down-loading with other systems, 15 definable Macro keys, auto logon to bulletin boards, menu-driven operation, and much more! With your RS-232 based modem, you can "talk" to any other computer system (even non-Sanyo systems!) including CompuServe, The Source, EZ-Link, MCI Mail, and a friend across the street or across the country! You can modify the program parameters to meet the requirements of ANY system you encounter. The parameters to meet include baud rate, echo, parity, stop bits, and word length, just to name a few. There's a big world out there. Greet it with open arms; greet it with MI-TERM.

128K DISK (RS-232 Modem/Port required) .....\$79.95



## M-DISK

Give your system the extra power you need! Great things come in small packages; M-DISK contains one ultra-miniature, super-fast, diamond-tough PHANTOM DISK DRIVE with built in disk! And not only is the afore-mentioned product miraculously disguised as a floppy disk, but it's a great value since other disk drives cost over \$300! M-DISK's talents stem from one fact: it is not a mechanical device! It's a software program that takes part of RAM and sets up a software duplicate of a hardware drive. It then makes DOS treat this "phantom drive" as the real thing. The result is that you get the equivalent of an EXTRA DISK DRIVE that behaves normally except for incredible speed and infinite durability! And it has no moving parts, so programs using a lot of disk accessing (such as word processors) run as fast as continuous files! Time is money. M-DISK can save you a lot of BOTH!

256K Required .....\$34.95

## GRAFITI

If you need a business utility to help you with graphs and charts, an engineer's tool to help with notes and plans, or just a new way to have fun drawing, GRAFITI's the program for you! Simple, flexible and accessible: These are GRAFITI's key features. With menu-driven commands, and cursor keys (even an option to use a joystick), art is only a few keystrokes away. Use GRAFITI for everything from pie charts and bar graphs, to floor plans and fashion designs, and from maps and geometric shapes, to line sketches and freestyle doodling. And once you've created your picture, you can use them right inside your own BASIC programs. And if you don't know much about Sanyo graphics, that's no problem, GRAFITI generates its own BASIC program lines! The writing's on the wall: GRAFITI is the program for you!

256K Required .....\$39.95



## ADVENTURE DISKS

You're in a cave seeking lost gold. You come to a chasm. How do you cross it? Decide quickly, strange beasts lurk ever closer! Puzzles like this create the challenge and fun of Adventure games. Each of the three disks contains five adventures; enough to keep you occupied for many, many weeks.

### ADVENTURE DISK #1

LOST GOLD ADVENTURE, ATLANTIS, CENTER OF THE WORLD, SPIDER MOUNTAIN, TREASURE DUNGEON II

128K DISK .....\$39.95

### ADVENTURE DISK #2

THE GOLDEN BATON, ARROW OF DEATH, ARROW OF DEATH PART 2, TIME MACHINE, ESCAPE FROM PULSAR 7

128K DISK .....\$39.95

### ADVENTURE DISK #3

CIRCUS, FEASIBILITY EXPERIMENT, WIZARD OF AKYRZ, PERSEUS AND ANDROMEDA, TEN LITTLE INDIANS

128K DISK .....\$39.95

# MichTron

6655 Highland Road  
Pontiac, Michigan 48054  
Orders & Info: (313) 666-4800  
**FOR YOUR CONVENIENCE,  
NOW AVAILABLE FROM YOUR  
FAVORITE SANYO DEALER!**





# CLUBS CLUBS CLUBS

*We are compiling a list of Sanyo Users Groups in order that you can find those closest to you and also that you may exchange newsletters, share ideas for topics of discussion at monthly meetings, etc.*

*Please let us know if we have omitted any clubs and send us complete up-to-date addresses. Also, please notify us if you wish to add or delete any names on this list. Send your information to:*

**CLUBS, CLUBS, CLUBS**

**Soft Sector**

• 9529 U.S. Highway 42 • P.O. Box 385 • Prospect, KY 40059 •

## **CALIFORNIA**

Sanyo PC Hackers (International)  
Cal Lindell  
12155 Edgecliff Pl.  
Los Altos Hills, CA 94022  
(415) 941-2796

Sanyo Users Group of Sacramento  
Randy Jones  
10155 Goinyour Way  
Sacramento, CA 95827  
(916) 362-8305

## **COLORADO**

Denver Area Sanyo Users Group  
Jerry W. Smith  
9997 West 85th Avenue  
Arvada, CO 80005  
(303) 424-7499  
modem (303) 431-0051

## **MASSACHUSETTS**

Sanyo Users Group/USA  
Jim Hornig-Rohan  
P.O. Box 8069  
Boston, MA 02114

## **MICHIGAN**

S.U.G.G.E.S.T. Sanyo  
(Special Users Group Gathering  
Enjoying Sanyo Technology)  
Ralph Landry  
Michigan Software  
43345 Grand River  
Novi, MI 48050  
(313) 348-4477

## **NORTH CAROLINA**

Sanyo CP/M-MS/DOS Group  
John L. Johnson  
707 Edge Hill Road  
New Bern, N.C. 28560  
(919) 638-6976

## **NEW YORK**

North American Sanyo 555 Users Group  
Howard P. Alvir, Ph.D.  
27 Norwood Street  
Albany, NY 12203

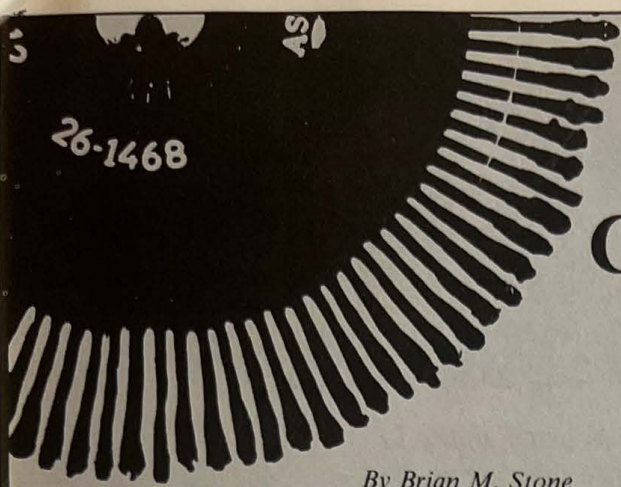
New York Sanyo Users Group

Patrick Yanez  
P.O. Box 1822  
Times Plaza Station, NY 11217  
(212) 855-9029

## **VIRGINIA**

Washington Area Computer Users  
Group  
Edward Cavert  
4032 Hadley Lane  
Fairfax, VA 22032





# Creating Graphics And Letterhead With A Daisywheel Printer

By Brian M. Stone  
Soft Sector Contributing Editor

**R**ecently a friend and I were talking about printing graphics and logos on stationery. He has a Sanyo MBC-555 Computer and a Sanyo PR-5500 Daisywheel Printer and wanted to be able to print a logo on his letterhead rather than having it printed. He has *WordStar* and I felt that we could use it to do what he wanted. I told him I would explore the possibilities and the following are the results.

If you own the following, you can create graphics and letterhead with your computer and printer.

- 1) A Computer (examples use a Sanyo MBC-555)
- 2) A Daisywheel Printer (examples use Sanyo PR-5500)
- 3) *WordStar* or similar word processing software

A Daisywheel Printer works on the principle of a hammer

striking one of the spokes of the Daisywheel, impacting the paper (through the ribbon) which then leaves the impression on the paper. A very important feature of "most" Daisywheel Printers is the fact that the horizontal and vertical motion of the carriage can be controlled by software. This is the feature which allowed me to create graphics with the printer.

The Sanyo Printer is capable of horizontal increments as small as  $\frac{1}{120}$ th of an inch and vertical increments of  $\frac{1}{48}$ th of an inch. By varying this spacing and the number of lines per inch I had the means by which I could create graphics. Most Daisywheel Printers including Silver-Reed, NEC Spinwriters and Radio Shack Printers will be able to do what is described later in this article. Some of the newer low cost typewriter-style printers may not be able to do what is described here.

Enough about printers — now let's find out why *WordStar* let me do what I wanted. When you look at the *WordStar* Reference Card you will find two sections called character pitch and line heights. These two features let me do graphics. The default values are .CW12, 10 characters per inch and .LH8, 6 lines per vertical inch. Changing these two commands allowed me to compress the dots (actually the period) which will be used to print the graphics. These are referred to as dot commands.

The *WordStar* reference card shows ".CW24" through ".CW4" as the characters per inch, .CW24 = 5 CPI and .CW4 = 30 CPI. Actually you can go to .CW1 for maximum compression. Line height is shown as ".LH24" through ".LH5", .LH24 = 2 lines per inch and .LH5 = 9.6 lines per inch. Line height can be specified as small as .LH1 for maximum vertical compression. Please see your *WordStar* reference manual for instructions on how to use the *DOT* commands.

Now that I have a way to control the print density the character set must be designed. To design the characters, I used the period. Because I can vary the space between the dots, I can control the size and density of the graphics to be printed. Before starting to design the characters, it must be noted that you cannot start in the first position of any row of dots because *WordStar* will try to interpret it as a *DOT* command. Therefore, always start your graphics in the second column. It is also a good idea to set the right hand margin to its maximum position, (*MicroPro* suggests 240). This will prevent *WordStar* from trying to justify each line, which would destroy the characters.

When I started to design the characters, I kept a height to

Figure 1

... RATIO 5 DOTS HIGH BY 6 DOTS WIDE  
CHARACTERS ARE 10 DOTS HIGH BY 12 DOTS  
WIDE

.MT0	.....	.....	.....	.....
.MB0	.....	.....	.....	.....
.LH2	.....	.....	.....	.....
.CW4	.....	.....	.....	.....
.OP	.....	.....	.....	.....
.LH1	.....	.....	.....	.....
.CW4	.....	.....	.....	.....
.LH2	.....	.....	.....	.....
.CW1	.....	.....	.....	.....
.LH1	.....	.....	.....	.....
.CW1	.....	.....	.....	.....



width ratio of five dots high for every six dots wide because the printer has more control over width than height. See Figure 1 for the word "TEST". Figure 2 shows the results of printing the word "TEST" with the *DOT* commands set to different values. The first example leaves a white space between the rows of dots. The next example is the same width but the height is  $\frac{1}{3}$  smaller, making the characters fully formed. The third example is the same height as the first but  $\frac{1}{4}$  as wide. The last sample is as small a character as can be made using the 12 dot wide by 10 dot high matrix that I selected.

I have not included a full character set because the characters I wanted will probably not fit the needs of all of the people who read this article. Besides, some people will want to draw graphics or logo-type characters rather than just alpha characters and this is only meant to show you that it can be done. There are many ways in which to use this information. The characters can be saved in individual files, such as *A.CHR* then loaded into your text file and block moved wherever you need them or you could make a file of the logo or text and merge your letter into it.

The above procedures are not for the novice *WordStar* user, as a good working knowledge of the program is recommended. But if you don't try, you will never learn.

Because *WordStar* has a built-in page length feature, the biggest problem I had was compensating for the text area of the letter after the logo was printed. The way I did it was to the graphics and find out how many lines it took. After the graphics were printed I measured the paper and found how many lines were left for text and the bottom margin. I then used the *.PL* command (page length) and made the page longer to compensate for the fact that my graphics were actually compressed into two lines high rather than 10 as *WordStar* said. Don't forget to reset to normal height and width with dot commands when it is time to print the text portion of the letter. This must also be done for additional pages of text so that each sheet of  $8\frac{1}{2} \times 11$  paper uses only 66 lines less the top and bottom margin.

As a suggestion, if multi-strike carbon film ribbons are available they will produce the best copy. A nylon ribbon will tend to smear when printing in very high density.

It was interesting and rewarding to take on this project. I hope many of you will take the time to try this, as the results will be worth all of the time spent.

Please see "Your Printer Can Shine With *WordStar*," Page 55 in this issue on how to install *WordStar* to take advantage of the special capabilities of the Epson MX-80 F/T.



Figure 2

TEST  
TEST  
TEST  
TEST

**AVAILABLE  
FOR THE FIRST TIME!!!**  
SANYO MBC 550/555

## PCA MICRO 10-NET Puts The Net Around Networking



Now you can simply and inexpensively connect your SANYO MBC 550/555 PC's and Compatibles into a true, full function local area network. Everything you need to connect one PC into the network is included.

PCA MICRO 10-NET is easy to install, learn and use. It is a truly distributed system which requires no dedicated hardware. All your resources may be shared, including hardware and application programs. You can also share as much, or as little data as you wish, with total data integrity and selective security. Built-in extras at no charge include Electronic Mail, Calendar, Chat, Printer spooling and News.

Start getting some real work done, with PCA MICRO 10-NET.

**\$794<sup>50</sup>**

(one unit required for each PC)  
SPECIAL INTRODUCTORY PRICE

**PCA MICROSYSTEMS, INC.**

4239 GATE CREST RD.  
SAN ANTONIO, TEXAS 78217  
(512) 657-5510  
Dealer Inquires Invited





# BASCOM can be a tool for improving Sanyo/IBM PC compatibility

## Bridging The Compatibility

By Laurence L. Raper, C.L.U.

**M**y early enthusiasm for Sanyo's MBC-550/555 was based on the combination of its claim of "70 percent to 80 percent IBM PC compatibility," its bundled software and its price. Early experiments seemed to bear out the compatibility claims. Like most, though, I quickly discovered the claims were much too optimistic.

Eventually, I came to terms with the fact that even though the machine is not as compatible as originally represented, it is still a top-flight value for the money on its own merits. I went on to develop financial projections under *CalcStar* (which is pending) an in-force business management package under *InfoStar*, and several miscellaneous programs in BASIC.

However, I still had a serious problem. For a variety of reasons (some of which are really quite logical), the insur-

*(Larry Raper, a long-time computer enthusiast, has developed numerous business, financial and insurance programs with Imsai, Radio Shack, NEC, IBM PC and now with the Sanyo 550 series. He is a brokerage management consultant with Paul Revere Life Insurance Company and is president of Financial Software Service, Inc.)*

ance industry has tended to look to IBM for most of its computer hardware. The most recent outgrowth of this attitude is the widespread acceptance of the IBM PC as the de facto standard for insurance microcomputer installations.

The result of this acceptance is that virtually all new insurance-related software being developed is for the IBM PC environment. My problem was quite simple. Programs I developed to run on the Sanyo would not necessarily run on the IBM and most programs released for the IBM would not run properly on the Sanyo. From either the software developer's standpoint or the end user's standpoint, this was a catastrophe.

If the Sanyo 555 was to be a viable part of an insurance office, some means had to be found to bridge the compatibility gap. One part of that bridge will be the subject of this article.

I am an insurance agent, not a computer scientist. In fact, all of my computer training has been self-taught, born out of a pressing need to meet the calculation and data storage demands of a large and growing insurance agency. As a result, my solutions aren't always the most "elegant" or the most "scientific." My primary emphasis is 1) Does it work? and 2) Can the software be run by

a person who understands the job it is intended to perform?

This is the backdrop against which Microsoft's BASIC language COMpiler, BASCOM, started to emerge as a tool with which to improve IBM-PC compatibility.

Perhaps a quick note is in order here for those who don't know what a "compiler" is. Simply put, a compiler is a program that permanently translates programs written in a programming language such as BASIC into instructions the computer can execute. The BASIC interpreter supplied with your Sanyo computer, on the other hand, translates each line of the program being run each time it is executed. The result of the translation is not stored, as it is only executed. On the one hand, a program that has been translated by a compiler runs much faster than a program running with an interpreter since once the translation has been done it never has to be done again. On the other hand, the program development process is much faster with an interpreter since you can just type in a line of code and run it immediately to test it. With the compiler you must edit it with one program, compile it with another, link it with another and finally run the program. As





# Gap

you can see, the compiling process is much more cumbersome. The trade-off is in the run-time speed of the final program once the edit/compile/link process has been completed.

Many software authors like to develop their programs using an interpreter and when they are finished, compile the final result for run-time speed. If the compiler and the interpreter being used are "compatible" this is a very workable approach.

The first clue that *BASCOM* could be an important help came when Jim But-ton's *PC-FILE* ran perfectly on the 555.

For those of you who have not been fortunate enough to see this piece of software, I'll take a short side trip to tell you about it and about "user-supported" software.

*PC-FILE* is an excellent, simple data-base management program. While it is not as powerful as *InfoStar*, neither is it as complex. Jim has done a very conscientious job of supporting this program. That support has included numerous upgrades and enhancements, all offered to his users at nominal cost.

"User-supported software" is an alternative software distribution method. The software is not public domain, but is not distributed through normal channels. You obtain a copy of the program from someone who has it and use it at your leisure. When and if you decide the software meets your needs, send a payment (\$45 in this case) to the author. Whether you decide it meets your needs or not, you are encouraged to copy it and share it with others for their evaluation under the same terms.

When I first tested it, I knew that *PC-FILE* was written in BASIC and compiled. I did not know which compiler he had used. My first reaction to my success with this program was to think that if I could just find the right compiler, compiled BASIC programs could be counted on to run reliably. This optimistic view was quickly tempered when Andrew Flugelman's *PC-TALK* (a "user-supported" telecommunications program) refused to operate at all. It was further weakened when my own rate quotation system (compiled with *BASCOM*) ran perfectly if there were no operator entry errors, but locked up the computer whenever an operator error occurred.

The first time I tried to compile a program on the Sanyo with *BASCOM* the results were very disappointing. I

saw error messages I've not seen before or since. Most of that problem eventually turned out to be syntax errors that were not errors under the interpreter, but at the time it was going on, it added to an already frustrating situation.

About this time I saw a report in one of the computer magazines that indicated *BASCOM* wouldn't work properly on the 555 because of its use of ROM calls. I concluded that I was wasting my time with *BASCOM* and set it aside. When attempts at using Super-Soft's compiler were no more successful, I went back to projects I was working on with *InfoStar* and interpreted BASIC.

*PC-FILE* continued to stick out as an exception to the apparent compiler problems. This, combined with the near-success of running my own quote program, continued to intrigue me. When I received the latest version of *PC-FILE*, the copyright notice and the documentation confirmed that the compiler used was *BASCOM*. I dusted off *BASCOM* and prepared to try again.

I compiled my quote program with *BASCOM*'s /D parameter and inserted a *TRON* statement in my error handling routine to allow for a trace. The culprit — the *SOUND* statement — quickly emerged. I had a fairly large loop that produced a brief, cycling sound to announce an error message. When the computer attempted to execute this loop, it locked up. As soon as this statement was removed and the program recompiled, the problems disappeared and the program ran perfectly.

Apparently either the *SOUND* statement is a good example of a statement that uses a ROM call or one which relies on different hardware to execute properly. As I indicated earlier, my tendency to be satisfied with the fact that a program works has kept me from digging

Hint . . .

## Using The Lock Key

When you are using BASIC, do yourself a favor and press the CAPS LOCK key (a red light in the CAPS key will come on when this mode is engaged). This will make it easier to enter commands involving drive letters (such as *FILES "B:"*, *LOAD "B:MYPROG"*, *SAVE "B:MYPROG"* and *RUN "B:MYPROG"*), which require that the drive letter be typed in caps.

Bob Tercero  
San Bruno, CA

## LOGICAL SOFTWARE

FOR THE  SANYO 550 SERIES

Dealers & Programmers Inquiries Invited

1800 W. 14 Mile Road  
Royal Oak, MI 48073

(313) 288-2020



further into this question. (After all, whether it's due to the use of a ROM call or whether it's because the two computers use different hardware, it doesn't change the fact that the statement can't be used in programs.)

Encouraged by the simplicity of solving my problem with the quote program, I tried a BASIC cross-reference program I had developed for the IBM. It compiled and ran without a hitch!

I continued to have fairly severe problems with a formatted screen input routine I had developed on the PC and modified to run on the 555 under its interpreter.

Two things contributed to overcoming these problems:

1) I went through the entire program and explicitly declared the type of each variable, eliminating *DEFINT*, etc. I suspect that actually all I accomplished here was flushing out one or two places where I didn't override the global declaration properly, but since it helped and since explicitly typed variables are easier to follow in the debugging process, I have adopted the practice of explicitly typing all variables (*LOOP%*, *MONEY!*, *COST#*, etc.) in all my programming.

2) I discovered that the cursor control keys return different codes when running under Sanyo's interpreter than when compiled. This was really the major discovery. It also explained why a screen input routine I had developed earlier for the PC refused to run under the interpreter but functioned perfectly when compiled, because when compiled with *BASCOM*, all the cursor control keys return exactly the same values as the PC. All the values are different when running under Sanyo's interpreter.

#### **A sad note about graphics and sounds**

My own programming projects make virtually no use of graphics. Only one used computer-generated sound (mentioned earlier). As a result, I nearly missed one serious area of *BASCOM*/Sanyo incompatibility. While the *COLOR* commands can apparently be expected to function reliably, other graphics commands do not fare so well. *CIRCLE*, *LINE*, *DRAW*, *GET* and *PUT* (graphics), *PSET*, *PRESET*, etc., fail to function. *BEEP* is ignored and, as mentioned earlier, *SOUND* locks the computer up.

This leads me to further speculation about the cause of the problem and a possible solution.

It seems that the hardware used for graphics and sound is physically in-

compatible with the IBM PC (remember, this is speculation, I am not a hardware expert). This would seem particularly consistent with the problem with *PC-TALK*. If this is the case, it would appear that rewriting those portions of *BASCOM.LIB* and *BASRUN.LIB* that carry out these commands would bring us to the point of having source code compatibility. This is probably not a minor project and would have to be done by someone expert in graphics. On the other hand, for those who need graphics, it certainly beats the alternative (writing an entire compiler, waiting for Microsoft to do it or doing it with-

---

***"... our only remaining problem is to isolate which statements don't work and do our programming with the remaining statements."***

---

out graphics). You may recall a company called Apparat that created quite a position for itself in the TRS-80 market by first creating a non-compatible, but powerful DOS and then providing "patches" to major programs (including *BASCOM*) to make them function properly in its environment.

Before we leave this subject, let me point out that we also have here a contradiction in our PC/Sanyo compatibility problem. While the graphics and sound commands do not function properly under *BASCOM*, the similarities under the interpreter are remarkable. *CIRCLE* works well with minimum parameters, produces function call errors when you try to draw a partial circle as shown in the *BASCOM* manual. *LINE*, *RESET*, *PRESET*, etc., work as documented. *BEEP* functions normally while *SOUND* produces a syntax error.

#### **Where does all this leave the software developer?**

As a software developer, the first question that started to take shape in my mind was "Why is compatibility so much better with the compiler than with the interpreter?" For a long time, the answer escaped me. Now it's so obvious that I really feel a little silly for ever wondering.

The fact is that Sanyo BASIC, IBM PC interpreter BASIC and *BASCOM*'s BASIC are three different languages. I had

allowed the similarity of the three languages to mask the fact that they are, in fact, different. If IBM PC interpreter BASIC would run on the Sanyo, much of the BASIC compatibility problem would disappear. This may happen if Sanyo releases *GW-BASIC* at some future date. For now, it won't, though, since on the IBM, as with Radio Shack's TRS-80 Model I and III, the core part of BASIC is permanently stored in ROM and only the disk enhancements are loaded from disk. The Sanyo, on the other hand, loads the entire language from disk.

It turns out that in order to gain portability between the machines, we have to use a common language. That language is our third alternative, *BASCOM*'s BASIC.

With a few carefully documented exceptions, *BASCOM*'s BASIC turns out to be functionally the same as PC BASIC. Since it now turns out that much of *BASCOM*'s BASIC runs well on the Sanyo, our only remaining problem is to isolate which statements don't work and do our programming with the remaining statements. When we do this, we will have object code that can readily move from machine to machine. From the software developer's standpoint, this makes the Sanyo a viable IBM PC-and-clones software development tool if graphics and sounds are not important to your programs.

Of course, the inability to fully test programs under the interpreter slows down the development cycle (since you must edit, compile, link and test each time you make a change), but while this is a significant inconvenience, it is not a fatal problem. It is also no different than the problem faced by someone using COBOL or FORTRAN.

Once I made the decision to use *BASCOM* in this manner (I even settled on *WordStar* as program editor), the rest of my task has been fairly straightforward. I have just completed development of a fairly major insurance rate calculation and proposal printing program using the Sanyo as my development machine and *BASCOM* as the language. I have successfully transferred the object code to the IBM PC and the Columbia. There would seem to be no reason now to expect problems with any other PC compatibles.

I have also been able to move another series of programs for doing financial projections from the TRS-80 Model III.

Mentioning the TRS-80 also brings up another interesting source of com-



# Sanyo Computers & Peripherals

Special sale on "4 digit" Sanyo Computers.  
They all include one dual-sided drive, WordStar, CalcStar, InfoStar,  
MailMerge and SpellStar.

**Sanyo MBC 1100 . . . . \$1,089/with free printer**

**Sanyo MBC 1200 . . . . \$1,279/with free printer**

**Sanyo MBC 4000 . . . . \$1,399/with free printer**

\* MBC 1100 includes one 320K drive and PR 5000  
letter-quality printer

MBC 1200 and 4000 include one 640K drive and  
one PR 5000 letter-quality printer

## Sanyo 550 Series add-on external drives

**One 160K drive w/case & power supply . . . . \$189<sup>00</sup>-\$210<sup>00</sup>**

**One 320K drive w/case & power supply . . . . \$245<sup>00</sup>**

**Sanyo 500 Series RS-232 . . . . \$80<sup>00</sup>**

## PRINTER PRICES

### EPSON

RX-80 w/ Graphtrax Plus . . . . \$295  
RX-80 FT w/ Graphtrax Plus . . . . \$399  
RX-100 w/ Graphtrax Plus . . . . \$549  
FX-80 w/ Graphtrax Plus . . . . \$559  
FX-100 w/ Graphtrax Plus . . . . \$719  
LQ-1500 . . . . \$1,195

### SANYO

PR 5000 Daisywheel 15 cps . . . . \$425  
PR 5000 Daisywheel 20 cps . . . . \$690  
Gemini 10-X . . . . \$285  
Gemini 15-X . . . . \$425

**Sanyo Printer Cables . . . . \$26.95**

### Modems

Hayes 300 Baud . . . . \$215  
Hayes 1200 Baud . . . . \$475  
Singleman Mark XII 1200 Baud . . . . \$259

## Displayed Video

886 Ecorse Road  
Ypsilanti, MI 48197

Immediate Delivery  
Dealer Inquiries Invited  
Free Shipping in the U.S.  
48 Contiguous States

111 Marshall Street  
Litchfield, MI 49252

**TO ORDER: Call 313-426-5086 or 313-482-4424 or 517-542-3280  
or 517-542-3939 or 517-542-3947**

*Authorized Sanyo Distributor*

*Prices & Specifications subject to change*



patible software. The /T and /4 parameters instruct *BASCOM* to compile Microsoft 4.51 BASIC source code. This just happens to be the same version of BASIC as is used on the TRS-80 Model I and Model III. Using MichTron's *IBM/TRS Transfer* utility, TRS-80 BASIC programs you find useful can be moved to MS-DOS and compiled. Other than changing *PRINT@* to *LOCATE x, y*, the conversion should be straightforward.

A third interesting avenue opened by *BASCOM* is that of code libraries. No one likes re-inventing the wheel every time a program is developed. Many standard routines can lead themselves to portability between programs. *BASCOM* makes this relatively easy with the /N parameter. This parameter instructs *BASCOM* to ignore line numbers except when they are the destinations of *GOTO*, *GOSUB*, etc. Line numbers become simple labels and the order in which they are assembled in the program is irrelevant. The standard routines can be called into the main program with the *\$INCLUDE* meta-command. The result is a completed program made up of ready-tested standard routines linked together with the new program. Typing and debugging times can be dramatically reduced.

#### What about the end user?

From the end user's standpoint, the problem is quite different. If the software he receives is written in BASIC and distributed in unprotected source code, finding the incompatibilities, correcting them and re-compiling the program

would seem to solve the problem. However, IBM's interpreter saves its BASIC programs in a different format than does Sanyo's. Therefore, neither can read programs saved normally by the other. Programs must be saved in ASCII in order for the source code to be moved from one machine to the other. On the other hand, if the program is compiled and distributed in compiled form, all is well *unless* a non-compatible statement such as *SOUND* is used. If a non-compatible statement is used, the flaw is near-fatal unless the author is willing to either release source code to you or recompile the program without the incompatible statement. Both of these possibilities are rather remote.

#### A (hopefully inaccurate) New Rumor ...

At the last minute a report has emerged that Microsoft and IBM have released a new version of *BASCOM* and that some new incompatibilities have emerged. I have not been able to confirm or deny the report, but it could be a significant problem. Version 1.0 of IBM's release of *BASCOM* and version 1.1 of IBM's release of *LINK* were used for the work reported in this article.

I understand that if it turns out that there is a compatibility problem with subsequent releases of *BASCOM*, MichTron is going to try to work it out to have the old version of the compiler available for Sanyo users, but hopefully that will not be necessary. When I can find out just what the story is here, I will let *SOFT SECTOR* know and the information can be passed on.

#### Where do we go from here?

If there is sufficient interest, several things are possible subjects of future articles in this area. Some of these will apply to software developers. Others will be for end users.

1) A utility program to convert a program saved in IBM PC compressed format to ASCII. This would allow you to purchase software written for IBM's interpreter, compile it and run it on your Sanyo.

2) A listing of commercial software that will run on the Sanyo.


3) A listing of the Sanyo's control codes for use in the *INSTALL* routines in some commercial software.

4) A series of "patches" for major programs modifying them to run on the Sanyo. For example, if anyone out there has figured out how to get *Knowledge Man* to work on the Sanyo, *please call collect!*

5) An article designed to help locate incompatibilities in programs you use and help you try to overcome them.

6) A translation utility to find syntax incompatibilities and either mark or correct them. Such a utility can speed transfer of software written for other computers such as the TRS-80 and quickly identify potential problem areas such as *SOUND* in IBM PC source code.

7) A "scientific" test of the compatibility of each *BASCOM* BASIC command on the Sanyo.

Actually, the list can go on for a long time. Which direction will be taken can really be up to you, the reader. Let us know your interest. 

## FRONTIER SOFTWARE, Inc. EDUCATIONAL and PRODUCTIVITY SOFTWARE

The EDUCATORS and SOFTWARE DESIGNERS at FRONTIER SOFTWARE have combined advanced TEACHING TECHNIQUES with CREATIVE PROGRAMMING to make the PROGRAMS both EDUCATIONAL and INTERESTING and provide a new kind of LEARNING and PRODUCTIVITY EXPERIENCE.

Ask your computer Software supplier for programs from FRONTIER SOFTWARE featuring - PROFESSOR WHIZBANG tm, or write to us for a Program List and Educational Software Suppliers.



FRONTIER SOFTWARE, Inc.  
P.O. Box 108  
FRONTIER, MI. 49239

PHONE: (517) 254-4441

"DISTRIBUTOR and DEALER INQUIRIES INVITED"

(PROFESSOR WHIZBANG is a Trademark of FRONTIER SOFTWARE, Inc.)



# A-OK Computers

## The Center of Creation and Dissemination of Sanyo PC Software and Hardware

### PrintScreen550™

"Fast, High-Resolution Graphics and Text from Screen to Printer with One Keystroke"

- **PrintScreen550** is designed for the everyday needs of most users.
- **PrintScreen550** capabilities
  - Prints a screenful of graphics to the most popular printers.
    - This prints everything on the screen whether its graphics or text.
    - User has the option to rotate the image on the paper. This permits Okidata 92s and other printers with less than 640 horizontal dot positions to print out the full screen.
  - Turns your Sanyo into a high-resolution graphics machine.
    - Multiscreen facility permits a printed image to be 640 dots by an almost unlimited number of dots in the perpendicular direction.
  - Currently supports: Okidata 92P, Gemini 10x, Epson, Panasonic 1090 & 1091, Mannesmann Tally Spirit 80, and soon many others.
  - Custom printer installation is available.
- **PrintScreen550** is flexible and easy to use.
  - Interactive mode
    - Works like the "Print Screen" button on the IBM-PC.
    - One keystroke does it all. No need to embed commands in BASIC. No extra programs to execute. No menus to fool with. We consider this feature so important that we delayed the release of this product for months until it was perfected!
    - Same single keystroke works in DOS, BASIC and all other software packages that run on the Sanyo.
    - Does not interfere with program execution or affect the data.
  - Batch mode
    - Can be activated in BASIC by a single, one-line command.
    - Interrupt-driven and can be called from programming languages.
    - Does not interfere with program execution or affect the data.
- **PrintScreen550** is very fast.
  - Nearly as fast as the printer can print.
  - No need to store the image on disk.
  - No need to exit the active program.
  - Written in assembly language.
- **PrintScreen550** is a lot of fun!
- **PrintScreen550** is a great buy.
  - **INCLUDES A-OK™DOS AT NO EXTRA COST.**
- **PrintScreen550** applications.
  - Makes beautiful hard copies of graphics drawn on the screen either interactively or by a batch program.
  - Multiscreen facility supports full page (and larger) graphics. Great for making viewgraphs and posters.
  - Use the multiscreen facility to make a high-resolution graphic. From this produce a Xerox or photographic reduction. This results in a very finely-detailed graphic.
  - Prints forms and special characters — including foreign language characters — from EasyWriter, BASIC, and other applications that can display them on the screen.
  - Much, much more.

A-OK's **PrintScreen550** software pulls the Print Screen button off the IBM-PC and puts it on your Sanyo MBC-550 series computer.

**PrintScreen550** ..... \$45  
**PrintScreen550-4™** (includes A-OK DOS-4) ..... \$55

### XCord550™

"Extension Cord for your Sanyo PC Keyboard"

A simple, inexpensive way to increase the ease of operating your Sanyo PC, MBC-550 series computer, is by adding **XCord550**.

This is a special six-foot long extension cable that lets you place your keyboard in a more comfortable position, such as on your lap, or another part of your desk.

**XCord550** was made straight, not coiled, to reduce the tension on connectors. A long, coiled cable can eventually cause connector failure.

**XCord550** is easy to use. Your present keyboard cord plugs into one end of the **XCord550**. The other end of the **XCord550** plugs into your Sanyo MBC-550 series computer.

**XCord550** ..... \$28

**RS232C Serial Boards IN STOCK** ..... \$97

### FOR SANYO DEALERS

Whether you're just starting out or well-established — cut your costs, enjoy the advantages of being part of a big chain and keep your total freedom. We've got the plan. Contact us NOW. Territories are limited!

**A-OK Computers** 816 Easley St., Suite 615 • Silver Spring, MD 20910 301-588-8446  
**Affiliated Dealer:** SL Computers 3609 Juneau Road, Suite 44-D Columbia, S.C. 29210 (803) 731-9379

### A-OK™DOS

"Not just another double-sided DOS"

- **A-OK DOS** is more generally useful than MS-DOS 2.11.
- **A-OK DOS** is much faster than 2.11.
- Supports all the disk formats 2.11 does.
- User-controlled scrolling in *all* sub-systems not just DOS.
- Prints a screenful of text to any Sanyo-compatible printer.
  - Interactive mode
    - with one keystroke
    - same keystroke works in DOS, BASIC and all other software packages that run on the Sanyo.
    - Does not interfere with program execution or affect the data.
    - Print quick drafts of short memos from WordStar without the bother of saving the file, printing the file, and then accessing it again.
    - Great for making documentation of software by showing exactly what the screen looks like.
    - Lets you record software and system anomalies.
    - Makes nice disk labels by printing the directory onto label stock.
  - Batch mode
    - Can be activated in BASIC by a single one-line command.
    - Interrupt-driven and can be called from programming languages.
    - Does not interfere with program execution or affect the data.
    - Simplifies program development.
- Formats supported:
  - any combination of single and double-sided drives.
  - double-sided drives support single and double-sided diskettes.
  - 8 and 9 sector formats — 360K, 320K, 180K, and 160K.
  - runs all software supported by MS-DOS 1.25.
- Compatible with other extensions.
  - works fine with M-Disk.
  - supports **PrintScreen550™** — A-OK's "fast, high-resolution graphics from screen to printer" software.
- Corrects flaws in MS-DOS 1.25 without sacrificing its strengths.
  - If you try to copy a single file to an unformatted disk, **A-OK DOS** does not crash the system like 1.25 and its other double-sided versions do.
  - Messages are easier to understand and use than 1.25 and 2.11.

We think you'll find **A-OK DOS** better than the competitors, and at a modest price.

**A-OK DOS** ..... \$35

### UPGRADE TO 360K PER DRIVE

Increase your disk capacity to 360K per drive using A-OK's DSDD Kit™ which includes:

- 2 first-quality new TEAC 55B double-sided double-density (DSDD) disk drives which replace the TEAC 54A's in your SANYO.
- A-OK™DOS.
- Complete, simple instructions.
- All parts needed.
- 90 day warranty.

**A-OK DSDD Kit™** ..... \$389 with **PrintScreen550™** .... \$399

### 720K PER DRIVE

1. **A-OK™DOS-4** — all the features of A-OK DOS, plus it supports 720K per drive!  
**A-OK DOS-4** ..... \$45
2. **A-OK DSQD Kit™** — same as DSDD Kit but with 2 720K TEAC 55F drives and needed DOS.  
**A-OK DSQD Kit™** ..... CALL
3. **MBC 550** and **555** with 720K per drive call for prices.

### Ada for SANYO

You bet! Now you can use the language of the future on your Sanyo or nearly any other micro. Janus/Ada is great for learning Ada and for serious applications development. Janus/Ada's 16 bit version supports floating point arithmetic via 8087. Available are: Pascal to Ada translator, Ada optimizer, source code for run time libraries, 8088 (8086) to 8080 cross compiler, site licenses, and the source code for the compiler (itself written in Ada). The compiler package for MBC series costs only \$495. Get started now with the Janus/Ada manual — \$35.

### New Products

A-OK Computers is developing a complete family of software and hardware for the MBC-550 Series computers. All of these products will work together in a synergistic, integrated way. If you are a Sanyo owner, ask your dealer about our products. If not available there, you are welcome to order from us.

If you'd like to be involved in developing software or hardware (or have already developed such), please contact us. We can provide the technical and other support needed to quickly and efficiently develop a high-quality product, one well-integrated into our line.

### Orders may be placed immediately.

Please send money order or cashiers check. Personal or company checks require 2-3 weeks to clear. Prices reflect a 3% cash discount. MasterCard/VISA/CHOICE accepted. Shipping, insurance and handling charges are 3% of total order value by UPS ground. 5%—UPS blue label. MD residents add 5% sales tax. Out-of-state order, no tax. Prices subject to change. All brands are registered trademarks. 20% restocking fee for all returned merchandise.



# REVIEWS

## Software review

### ***Appointment Book — A Timely, Convenient Program For Scheduling***

By Lawrence C. Falk

One of the obvious uses of something that can store, sort and reformat data is the keeping of personal and business appointments and things-to-do lists. For this reason, a computer with the power of the Sanyo 500 series is a perfect tool for this task, provided someone has some effective software to do it.

*Appointment Book*, by Olympic Educational Software, is the kind of program for which many of us have been looking. It allows the user to keep track of his or her appointments on a day-by-day basis and also lets you look for specific appointments. This dual ability is an excellent bonus.

*Appointment Book* uses two disks: a program disk which loads the software into memory, and a data disk to hold all the information you might need for your daily duties. Because the program disk loads the program into memory and then is put away, Sanyo 550 owners will be able to use the program as effectively as those with the 555 and two disk drives.

This software was written on and for the 500 series. That is evident in its use of colors, large-size type in the menu and the like. And, while Olympic has a number of other programs available — including a wealth of educational ones — *Appointment Book* has a very important use in the everyday world.

Each data disk is initialized to a specific year. While this may be a small problem in that you would have to switch disks at the end of the year, it is an easy and logical breaking point. And, it is easy to just slide one disk into the drive when you have to schedule an appointment in the next year.

To arrange appointments, you can set up as many as two search headings per day. In this area, you need to determine how many appointments you would want to schedule. Each heading allows up to six lines of additional information.

In setting up a calendar for myself, I set one heading as "appointments" and a second as "things to do." However, were I less busy with appointments (or if there were less things to do), I could have set up heading one as the name of an appointment (such as "Don Jones Meeting") and used the six additional entries available for information about the meeting.

That would, of course, have limited me to only two meetings on any given day — so, as I say, one has to decide how to set up *Appointment Book* to best advantage when starting the system.

This is not to say that you can't change the way you do it in mid-stream — or just totally change from day-to-day. *Appointment Book* is versatile enough to do it both ways, but it would seem to me, anyway, that it would be easier to find items in the program's search mode by using one format or the other.

*Appointment Book* allows you to search by either date or heading. In the case of heading, this is one of the two which you entered. Once an appointment is found, either by searching date or heading, *Appointment Book* lets you manipulate the data in that particular entry.

You can, for example, print it out to a printer, edit the information in the listing, or delete the entire listing. Since there is no mention in the documentation about saving disk storage space, I assume that you can store an entire year's appointments on one data disk. This makes it very nice for keeping track of what you have been up to in the past.

Finally, *Appointment Book* has a calendar function, which prints the calendar for an entire month on the screen. This is a nice feature if you are trying to determine the date of something that is two Saturdays from now.

This is not a perfect program. For instance, 12 appointments in one day may be too few for you. However, I keep pretty busy and have never had that many in a single day.

The main menu should add an option to quit the program. As it is, when you want to stop, just press the BREAK key.

These two minor complaints aside, *Appointment Book* is a real boon to anyone who has a great deal to do and little time to worry with scheduling his or her time. Because it also has a very flexible data entry method, it will accommodate itself to a variety of uses and personal time-keeping methods.

I like *Appointment Book* and its use should free up some of my time to do things instead of worry about how to keep track of them.

(Olympic Educational Software, 1500 South 336th, Suite 6,  
Federal Way, WA 98003, \$39.95)



## *Filebase* — An Exceptional Data Management System

Sometime in our computer experience it comes to pass that we will find the need for a data management system, or as more commonly referred to, a database. A database is a software package used for holding information in a very structured, specific format. For example, the most common use for a database is a mailing list. In a mailing list, each record (item of information) has several fields (name, address, city, state, ZIP) that store this information for a particular person. Such features as sorting alphabetically on certain fields, searching for a particular record, and addition and deletion of information are all common features to a database.

Now that you know what one is, what do you do with it? For the business, the uses are obvious, but what about in the home? A database could be used to make a neat, up-to-date, personal telephone directory. And what about that yearly chore of Christmas card sending? Life would be a lot easier if your Christmas card list wasn't stuffed in a drawer, with crossed out names and new entries, barely legible, jotted down at the end. Just enter the list once in a database, and from then on new entries are easy and deletions are a snap. From reading this, I'm sure that you've probably even thought of a few uses on your own. Read on and find out a little more about one of the better databases for the Sanyo, *Filebase*.

*Filebase* by EWDP Software, Inc. is a flexible, well done database that gives both the experienced and inexperienced user a means for getting the job done, the way he or she desires. Definition of records is flexible, as is definition of fields. Data entry is nothing special, but the search and sort functions are quick to respond. Such special features as merging two files and reading files created by other databases help to make this a valuable database.

*Filebase* creates "comma delimited field records" (a direct quote from the user manual). I've already explained that a record is a group of fields (items) such as name, address, city, state, and ZIP. Items in a record are separated by a comma (the comma cannot be seen by the user). The comma is flexible which means that the length of a field (and record) are determined by the information that you input. This is in contrast to most databases which have predefined records that either have too much space (uses up memory and disk storage) or not enough (can create a problem). If you've used other databases, you realize the importance of this feature simply because it eliminates the worry of "running over."

*Filebase* is limited in the aspect that a record may only

contain 40 fields. This means that no matter how long a record may be, it can only have 40 items of information. Of course, most users would never have a need to exceed that limit.

When sorting, you'll find that *Filebase* is probably nothing out of the ordinary, but it does give results quickly, using the familiar logical comparators (EQ, GT, LT, etc.). Sorting also includes a special option called a *sort merge*, where two files can be merged and sorted simultaneously.

Stepping through records or searching for a particular record is a nice, easy-to-use feature that all of us will have a lot of use for. *Filebase* made it easy to get where I wanted when I wanted.

Printing is a feature that leaves little to be desired. *Filebase* allows for almost any type of form. You may print an entire record on one line, three fields for an eight-inch width paper, four fields for an 11-inch, and five fields for a 14-inch width paper (each field being side by side as in a phone directory) or you can use a number of lines, each field being one on top of the other (as on a mailing label). An unusual feature of *Filebase* is long text fields, which are wrapped in paragraph style when printing in label format. Print continuously or pause for paper or label or envelope change. Another nice feature that isn't seen often (at least not by this author) is the *Filebase* option to print with or without field prompts and with or without record numbers. *Filebase* also gives the user the ability to enter his own comments, right from the keyboard, to be printed with the listing. When defining files for print, the user has the option to use only part of a field; in this way, extra long fields can be shortened. All in all, the print feature is very impressive.

*Filebase* uses a similar type of record format as the popular database *Datastar* (Micropro). In this way it is compatible with *Datastar* and other software associated with it. It can be used directly with most letter-merge software such as *MailMerge* (Micropro). Also, files created with *Filebase* have a high degree of BASIC compatibility and can be converted to fixed record length (C BASIC) for random access. The BASIC programmer will find this to be a most desirable feature.

The software was most definitely designed with the user in mind. Right from the start this is illustrated. The program needs no installation, just start it up. A full menu-driven system that leaves little room for error. Error trapping with immediate feedback to unacceptable responses, prevention of overwriting present files, and even a number of sample files for experimentation are all included to help avoid user frustration.

The manual for *Filebase* is well written and includes a tutorial that brings the user step by step through the program listing options and gives a brief synopsis of how the program is handling certain functions. The manual also includes a reference section for quick access to functions and options.

*Filebase* is an exceptional database that is sure to please any user in the home or in the business. Its features and abilities show that the author did his research well and put together an advanced package that is easy to use and easy to learn.

(EWDP Software, Inc., P.O. Box 40283, Indianapolis, IN 46246, \$100)

— William F. Heitzeg



## A More Effective, Efficient DOS: DS-DOS

DS-DOS sounds familiar doesn't it? But, DS-DOS is more than just a change in lettering. DS-DOS is MichTron's special enhancement of MS-DOS that not only enables the use of double-sided drives on a Sanyo computer, but has some added features most definitely worth talking about.

With DS-DOS, they've taken many of the great features of MS-DOS that we've come to know and love, and added to, or, changed them. The end product is a more efficient and effective DOS.

The main objective of DS-DOS is to enable the use of double-sided disk drives on the Sanyo 550 series computers. In this way, you can operate 320K per disk drive instead of 160K. This can be a very nice way to go, especially if you are using large utilities with your system. DS-DOS also increases the number of files per disk (64 files to 112 files) and the file size minimum (512 bytes per file to 1024 bytes (1K) per file). The increase in the number of files per disk might be useful to those who use a lot of small programs, but the increase in file size minimum can only serve as a hindrance.

One of the nicest innovations in this package is the nine sector format. Traditionally, MS-DOS 1.25 formats each track with eight sectors, but a special format utility included with DS-DOS allows the user the option of formatting with either eight or nine sectors. The difference being that the nine-sector format gives the user about 20K more for single-sided disks and 42K more for double-sided disks. We can definitely see how this might be advantageous, however, it can also be a drawback. When a disk is formatted for nine sectors, it may only be read by DS-DOS or MS-DOS 2.0. For some, this will be a nuisance, while for others it won't cause any trouble at all. It is something to consider, however.

Two features of the DS-DOS that are a bit more subtle, are the extra large cursor and the date recall upon Reset. Most of us will readily agree that the MS-DOS cursor is a little small and maybe a little hard to see. DS-DOS's cursor is a full block. It is large and extremely easy to see (you can't miss it). This makes things a little easier on the eyes. The date recall upon Reset will eliminate some headaches. With this feature the Sanyo will remember the date you entered upon power up. As long as the computer remains on, no matter how many times you Reset it, the date will be remembered.

Besides these added features, DS-DOS has expanded upon the format utility and the disk copy function.

With the format utility, the user now has four different formats to choose from: 1) single-sided, nine sectors per track, 180K; 2) double-sided, nine sectors per track, 362K; 3) single-sided, eight sectors per track, 160K; and 4) double-sided, eight sectors per track, 320K. As mentioned above, and as you can see, the nine sectors per track increases disk capacity, but also decreases compatibility. The variable format utility is both easy to use and nice to have. It works exactly like the standard format, except that a number, 1 - 4, is placed at the end of the format. With this utility, the user will have no trouble interacting with other computers.

The disk copy function has been expanded to format the destination diskette before making a copy. This can be a time-saving feature, but it does have its drawbacks. Because of this feature, you may only copy to a disk of identical format; for example, single to single or double to double. Eight-sector disks may not be copied to nine-sector disks. If you are trying to convert all of your software over to double-sided disks, this may prove to be a setback.

The manual for DS-DOS is well written, using plenty of examples and illustrations. A special feature included in the manual is a 15-page section which lists the errors of the original MS-DOS manual and gives corrections.

It is evident that the entire package is well thought through. The foresight used in the design of the DOS is remarkable. This is not only a program that I would recommend for double-sided disk users, but for those with single-sided drives as well. All of these features make DS-DOS well worth the money.

(MichTron, 1691 Eason, Pontiac, MI 48054, \$49.95 plus \$3 S/H)

— William F. Heitzeg

## ENHANCE WordStar with

## P-r-o-p-o-r-t-i-o-n-a-l Spacing on WordStar

You are reading text printed by WordStar in proportional spacing, providing a professional, easy to read, typeset appearance, direct from the print command on any version of WordStar. Also print two or more columns on a page, underline spaces between words, and much more. Works with most letter quality printers (Diablo, Qume, NEC, Juki, Brother, C. Itoh, Silver Reed, others).

"The best and least expensive method of dramatically improving the appearance of any WordStar text" - LIST Disk version (CP/M, MS/PC-DOS) automatically modifies WordStar \$75 including manual. Manual only (100 pages - with full details for implementing PS using Install) \$25. No technical skill is needed. Text can be right justified. Printer does not require PS logic. Prices include shipping in U.S. NYS add tax.

Okay! My check is enclosed for \$..... (or charge my VISA/MC acct # ..... exp .....).

### Writing Consultants

Suite 253, 11 Creek Bend Drive - Fairport, NY 14450  
1-800-828-6293 (in NYS 1-716-377-0130)  
phones open 24 hours - dealers please call or write



## Cashman: A Game For Novice And Master

Video games, in and out of the arcade, tend to have a limited number of themes. So, when one is found that is unlike any other ever created, it is a refreshing experience. *Cashman* is such a game. *Cashman* is a game that will delight players of all ages. The simple theme, gathering money, is complemented by wonderful graphics, strange and crazy obstacles, and a seemingly endless variation of screens. The excellent graphics display, the easy control movements, and, most of all, the content, make this a truly original game.

All of us know the capabilities of Sanyo graphics. We've seen them in those wonderful little demo programs that so many dealers show. But, how many of us have ever really explored them in detail? The author of *Cashman* sure did. The game is an explosion of color and graphics that will propel the user into an enchanting world.

*Cashman* is no slouch in the sound department, either. Although sound does have its limitations as to its contribution of a video game, it is an overall factor to consider. With respect to the sound capabilities of the Sanyo, *Cashman's* sound is well done, but not outstanding.

In *Cashman*, each player is out to collect as much CASH (money bags) as possible before the power runs out. The playing field consists of horizontal GIRDERS and vertical CLIMBERS (ladders, chains, nets, etc.). To gather money, the player may run along GIRDERS, move up and down CLIMBERS, JUMP from place to place (only in some stages) or, if the player has enough guts, even catch a ride on a high flying BYRD. Other factors such as moving CONVEYORS and FLINGERS, which fling a player into the air, can also be a help.

Each player is out to make as much CASH as possible. On the screen, there are bags of money represented by pulsating dollar signs (\$). Each is worth 50 dollars. Besides collecting money bags, the player may also make money by disarming BOMBS or by hitting a KAT with an egg.

Although this pacifistic game excludes the possibility of killing or being killed, there are still many hazards to consider. At the bottom of the screen is a row of 10 smiley faces representing "power points." Play will continue until a player's power level reaches zero. Purple KATS, ZAPPERS, and EGGS thrown by another player (only in two-player games), will bar the player's way and cause him to lose precious power points.

One of the most unique features of the game is the provision for two players to play simultaneously, each battling it out for the money. The players are represented by two figures, a SAILOR and a SHEIK. The SAILOR wears a white hat and has blue boots, while the SHEIK has a light blue turban, green pants, and red pointy slippers (a good example of the intricate graphics). During a two-player game, one player uses the joystick, while the other uses the keyboard. For an additional fee, MichTron has a special adapter that allows the use of two joysticks on your Sanyo. Using two joysticks during a competition of two players is

most definitely the way to go, especially since the keyboard control does not even come close to the response time for the joystick.

*Cashman* includes more than 40 levels (or sites as they are called) that continue to challenge the player and keep the game interesting long after the average "burn-out" time for most video games. Sites are grouped into AREAS which are sub-divided for the player's convenience. The six different AREAS provide an array of challenges and variation. The BEGINNER ONLY sites (1-4) provide a simple opportunity for familiarizing yourself with the game, while the EXPERT (PUZZLE) SITES (40-???) are only for the very best *Cashman* veterans. The total number of sites is not documented. The author has done this purposely as a challenge to any player who prides himself in being a master gamer. To this date, reportedly, no one has completed all of the sites.

As for control, *Cashman* is a winner. The game reacts with accuracy to the joystick, and eliminates that tiring frustration players often experience with slow reaction time. *Cashman* also gives the player an option to use the keyboard as a controller, but this method is much slower in response, and can hardly be compared with the superior accuracy of the joystick.

Special features of the game include use of the Sanyo's function keys to select game, players, and toggle sound on and off. Also a high score area allows for the saving of the top 10 players out to disk.

*Cashman* displays skill and creativity in all aspects: appearance, sound, playability, and enjoyment. It is clear that this was a game long in the planning and making. Now that it has arrived on the video scene, it promises to be an all-time winner.

(MichTron, 1691 Eason, Pontiac, MI 48054, \$34.95)

— Bill Heitzeg

## SUBSCRIPTION INFORMATION

If you do not receive your copy by the 25th of any month, send us a card and we will mail another immediately via first class mail.

You must notify us of a new address when you move. Notification should reach us no later than the 15th of the month prior to the month in which you change your address. Sorry, we cannot be responsible for sending another copy when you fail to notify us.

Your mailing label also shows an "account number" and the subscription expiration date. Please indicate this account number when renewing or corresponding with us. It will help us help you better and faster.

For Canadian and other non-U.S. subscribers, there may be a mailing address shown that is different from our editorial office address. Do not send any correspondence to that mailing address. Send it to our editorial offices at P.O. Box 385, Prospect, KY 40059.



## ProofReader Makes Sanyo A Good Speller

*Random House ProofReader*, a spelling checker program, makes a very useful addition to either your *WordStar* or *EasyWriter I* program. It is very friendly and well documented, but requires two drives to operate. The version for the Sanyo MBC-555 has 32,000 words in the dictionary and occupies 120K of disk space.

With *ProofReader* in drive A, the dictionary filename and file to be checked are entered from the keyboard. The program then reads the file and sorts the words alphabetically. The status is then displayed indicating how many words were read and the number of unique words in the document. After sorting the unique word list, the program checks them against the 32,000 word dictionary. There is a neat little line in the status chart that goes from A to Z and as the program checks from the start of the alphabet to the end, this line reads:

NOW CHECKING LETTER:

\*\*\*\*\*KLMNOPQRSTUVWXYZ.

As each letter is checked, the letter is replaced with a star. This feature lets you keep track of where the program is in its checking routine. After checking the main dictionary, it will automatically go to the auxiliary dictionary if you have one started from new words that have not yet been included in the main dictionary. When this operation is completed, the program displays a line stating that it has completed checking the file, listing the filename and the number of "unknown" words it has found. This unknown word list may be new words or words that are misspelled.

There are two basic differences between *ProofReader* and *SpellStar*: how the words were chosen and included in the dictionary, and the help given when a spelling error is suspected.

Unlike a printed dictionary, a spell checking lexicon should contain all the forms of a word — for example, easy, easier and easiest — so that whatever form a word takes in the written text, the lexicon recognizes the word and doesn't erroneously mark it as a spelling error. This lexicon contains the 32,000 most commonly used words.

Secondly, *ProofReader* lists a selection of correctly spelled words it selects when a spelling error is suspected and you may make your choice from this list instead of having to look up the word in a printed dictionary as is the case with *SpellStar*.

After the dictionary(s) have been checked, a command menu is displayed for your selection of the correction mode best suited to your word processor. These modes are: (C) CORRECT (normal mode — shows context); (R) REVIEW (for rechecking — no context); (M) MARK (unknown words in file with #); (W) WORDSTAR mode (correct plus mark if changed width); (D) DISPLAY (unknown words on screen); and (E) EXIT (from *ProofReader*).

I have used this program with both *WordStar* and *EasyWriter I* and it works exactly as documented with both word processors. My only complaint is that when in the *WordStar* mode, I would like to have had the program insert

an '@' before the corrected word. This would allow you to use the find/replace option in *WordStar* instead of having to scroll through the document line by line.

When you are in the correction mode, the following choices are at your command: (C) Correct word, prompt will follow; (D) DICTIONARY help — find a word in the dictionary; (L) LEARN word for auxiliary dictionary; (A) ACCEPT word for rest of session, don't learn; (I) IGNORE word just this once; (Q) QUIT: abort session, no changes saved; and (E) END: Exit and save changes so far.

When you enter a carriage return, the first suspected error is displayed. If it is a misspelled word, and you are not sure of the correct spelling, pressing 'D' will ask the program to look in the dictionary and find approximately 15 to 20 words that could be the word that is misspelled. These are displayed and if the correct spelling is listed, pressing the 'C' lets you correct the spelling. If the correctly spelled word is not displayed, pressing 'D' a second time will let you alter the spelling slightly and a different group of 15 to 20 words will be displayed. This procedure can continue until you find the correct word or give up and use some other method to correct the spelling — like calling a friend.

Included with the software is a stiff paper-bound pamphlet of 20 pages giving detailed descriptions of the program operations and what is taking place during each step of the checking process. Also contained are five pages of detailed technical notes about how the words were chosen and the dictionary developed. This is a big help in understanding the theory behind the *ProofReader* program and why some unlikely words are included and others that you might expect to see were not. It is one of the better pieces of documentation I have had the pleasure of reading and reviewing. More programs should have the same attention applied to their documentation — then the program distributor would not have the "assistance needed" calls that are received when the workings of a program cannot be determined from the sketchy documentation.

Now that you have corrected all of your spelling errors and included the new words in the auxiliary dictionary, there are only a couple of tasks left to tidy up, like first, going back through your document in your word processor program to remove the '#' and rejustify the text — if you had it justified before starting the correcting process. I usually do not justify until after proofing so the '#' symbols are not written into the corrected text.

Second, if you have added about 400 new words to the auxiliary dictionary during your various proofing sessions, the auxiliary dictionary should be added to the main dictionary, as the program has a tendency to become slower when over 400 words are in the auxiliary. This is a simple process and does not take any longer than proofing a document of approximately 1,000 words.

Overall, *ProofReader* is an excellent program. I especially like it because I am not a very good speller and the dictionary assistance provided by displaying a selection of words is a great help. I was taught spelling by memorization and I can usually recognize the correct spelling when I see it. However, to have to look it up in a dictionary with no clues to the spelling can sometimes be a very dreary and often fruitless task. I like *ProofReader*.

(Wang Electronic Publishing, Inc., P.O. Box 367, Tigras, NM 87059, \$50)

— Fred Clabuesch



## Keyword — A 'Key' Program For Changing Keywords

*Keyword* is a BASIC program that allows you to change one or all of the keywords accessible with the '—' CONTROL and shifted CONTROL keys. Do not be put off by the almost total lack of documentation; the program is menu driven and requires no tedious explanation.

The Sanyo MBC series computers with Sanyo BASIC allow BASIC words such as *BEEP*, *RUN*, *CLS* and others to be extended with the CONTROL key and a letter key, and the shifted CONTROL key and a letter. *Keyword* allows you to easily change these default keywords to words of your choice. The program is somewhat limited in that you may only enter a string of up to nine characters for each keyword. These default keywords may be found on Pages 3 through 35 of the BASIC section in the Sanyo manual.

To use the program, you simply run *KEYWORD.BAS*. The program then reads in the default set of BASIC keywords. These words are then listed to the screen, and you are given the option of changing any or all of them. When you are done, hit ENTER and your new words are written into the copy of Sanyo BASIC on your disk. To implement the new words, return to DOS ready, and re-enter BASIC. This is actually changed in your copy of *BASIC.EXE*, so do it on a backup copy!

*Keyword*, I think, is aimed at the serious BASIC programmer. If you do not write a lot of BASIC code, you probably don't need it. However, if you do program a lot in BASIC, especially using keywords that are not included in the default file, then this program is for you. At \$9.95, it is a utility that no serious BASIC programmer should be without!

(Michigan Software Dist. Inc., 43345 Grand River, Novi,  
MI 48050, \$9.95)

— John Ross, Jr.



Hint . . .

## 'Porting' IBM BASIC Programs To The Sanyo

If you have a program written in BASICA or GW-BASIC for the IBM or one of its imitators (such as Compaq, Columbia, etc.), you can load it into Sanyo BASIC by saving it in ASCII (type *SAVE "program.bas",A*) on the IBM-type machine. Sanyo BASIC can't load IBM BASIC programs saved in the normal compressed format. (If the IBM-type computer is using MS-DOS 2, make sure to save the file on a single-sided disk so that the Sanyo can read it; if you have MS-DOS 2 and double-sided drives in your Sanyo, you can read IBM double-sided disks directly.)

Bob Tercero  
San Bruno, CA

## SUBMITTING MATERIAL TO SOFT SECTOR

Contributions to *SOFT SECTOR* are welcome from everyone. We like to run a variety of programs which will be useful/helpful/fun for other Sanyo owners.

**FORMAT:** Unless the program accompanying your submission is less than 10 lines, we must have the program itself on disk. We will print out the listing to our specifications. We simply cannot take the time to key in (and debug our typing errors) material which is longer than that. Editorial copy can also be included on disk, using any of the word processors currently available for the Sanyo 55X. However, please also include a double-spaced hard copy of your editorial material and hard copy of your program listing. Please do not send in all capitals. Use upper- and lowercase. While it is a big help to us in typesetting for you to send your article saved on disk using the ASCII option, it is not mandatory. But we must have, at the very least, a double-spaced hard copy of the article.

**WHAT TO WRITE:** Anything with a practical application. If it interests you, it will probably interest a lot of others. However, we vastly prefer articles with accompanying programs which can be entered and run. The more unique the idea, the more appeal. We can prepare finished tables, diagrams and schematics from your rough draft if you provide legible copy and full directions. We have a continuing need for short articles with short listings.

We do pay for submissions, based on a number of criteria. Those wishing remuneration should *so state* when making submissions.

For the benefit of those who wish more detailed information on making submissions, please send a SASE to: Submissions Editor, *SOFT SECTOR*, P.O. Box 385, Prospect, KY 40059. We will send you some more comprehensive guidelines.

Please do not submit programs or articles currently submitted to another publication.

2

## AGENTS WANTED TO SELL SANYO

Write: CMP  
2922 JEFFERSON PLAZA  
FT. PIERCE  
FLORIDA 33450





# Computer Gallery



20 Hillwyck Drive • P.O. Box 7420 • Toledo, Ohio 43615 • (419) 535-7370

**SANYO**



## SPECIAL SALE

550 with your choice of monitor or second drive  
**895.00**

**550 — 799.00**

128K RAM 160K drive  
MS-DOS, Basic, Wordstar, Easywriter, and Calstar  
Software included

**550 -2 995.00**

Same as above but with  
360K Drive and MS-DOS 2.11

**555 1,095.00**

128-K Two 160K Drive  
All Software above plus your choice of  
Micropro Pack or Easy Pack  
MICROPRO PACK - SPELLSTAR,  
MAIL MERGE, AND INFOTAR

EASY PACK - EASYWRITER II,  
EASY FILER, EASY PLANNER

**555-2 1,295.00**

Same as above but with 360K Drives  
and MS-DOS 2.11

## SOFTWARE

WE STOCK SOFTWARE FOR SANYO. CALL OR WRITE FOR  
LATEST CATALOG, SUPERSOFT, MICROSOFT, MICHTRON  
OLYMPIC SOFTWARE, IUS, AND MORE.

ACCOUNTING SOFTWARE, UTILITIES, BUSINESS  
GRAPHICS, SCREEN DUMPS, DRAWING PACKAGES -  
GAMES - LANGUAGES - PASCAL - FORTRAN - EDITORS -  
ASSEMBLERS - APPLICATIONS

## MONITORS

**SANYO CRT-36 169.00**

Shown above Super Hi-Res Green Monochrome Monitor

**SANYO CRT-30 109.00**

Green Monochrome Monitor  
Amber Monochrome Monitor

**SANYO CRT-70 597.00**

Super Hi-Res RGB Color Monitor

**NEC Hi-Res RGB Color 459.00**

**TAXAN Med-Res RGB Color 325.00**

*All monitors come with cables*

**ONE  
STOP  
SANYO  
SHOPPING**

## PRINTERS

**GEMINI 10X 299.00**

**GEMINI 15X 429.00**

**C. ITOH**

**379.00**

Prowriter 120 CPS Near Letter Quality

**SILVER REED 500**

**459.00**

Letter Quality 13CPS

**SON OF STARWRITER CITOH TEC 599.00**

Letter quality 20CPS 100% Duty Printer

## PRINTER CABLES

5 foot Sanyo to Centronics 29.00  
9 foot Sanyo to Centronics 39.00  
5 foot Modem Cable 24.00

## DISC DRIVES

TEAC 160K Add on Drive 189.00

TEAC 360K Add on Drive 249.00

With software for 360K

SANYO 550 UPGRADE KIT 359.00

Includes 160K TEAC Drive with software  
Easywriter II Easy Filer Easy Planner

## UPGRADES

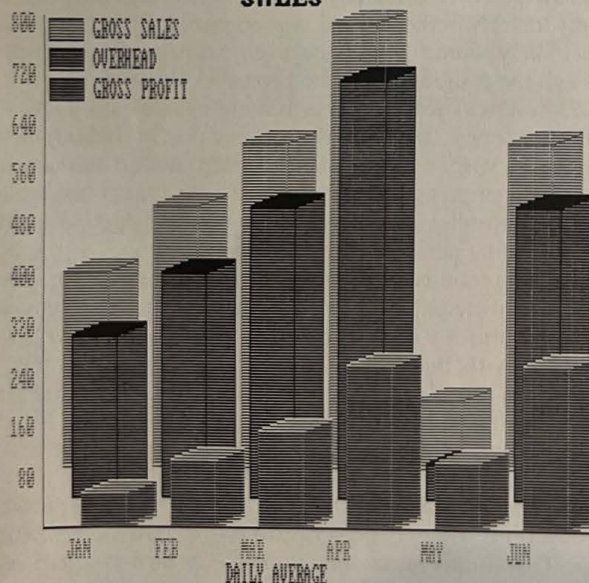
128K RAM Upgrades to 256K RAM 119.00  
100ns 4164 Chips

RS-232C Port for Modem or Printer 99.00

SPEAKER BEEPER 54.00

Changes buzzer to pleasant "Beep" with full volume  
control

## SALES



FOR YOUR CONVENIENCE,  
NOW AVAILABLE FROM YOUR  
FAVORITE SANYO DEALER

# MASTER GRAPH

**\$89.95**

## FEATURES:

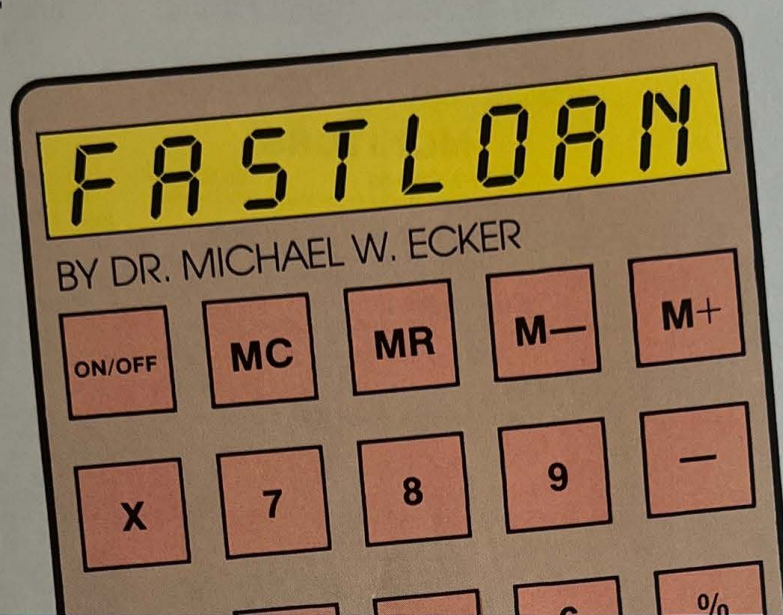
- ★Fast
- ★Menu-driven for ease of use
- ★Special screen-dump utility
- ★Compare multiple graphs on the same screen

## DRAWs:

- ★Line graphs
- ★Pie charts
- ★Bar graphs
- ★3-D Bar charts



Calculate your monthly  
loan payments the easy  
way with . . .



If you are making a major investment, such as buying a home, computer, or car, you will almost surely want to take out a loan. It would be nice to be able to calculate the monthly payments for yourself. With this program, you can do so very easily and obtain not just the amount of your monthly payment, but also the total you will pay over the life of the loan, the total interest, and even a loan amortization table showing the portions of your payments going to interest and principal, as well as remaining balance.

For instance, in the case of a home, suppose you wish to borrow somewhere between \$40,000 and \$60,000 which you can get at interest rates in the 12.5 percent to 13.75 percent range for a term of 20 to 30 years. What would the monthly payments be under these circumstances?

This is the situation I found myself in last year as I embarked on buying my first home. One of the nice things about this program, is that you can loop through it using some of the same values for principal, interest, and term (number of years) just by hitting your ENTER or RETURN key when prompted. The program will use the value you used for the previous question. You will note the variables PT, IT, YT. These stand for temporary principal, interest, and years. I say "temporary" because, in looping through a

program, if a value is to be input and you simply hit the RETURN key, the Sanyo treats the input as zero. On other machines (I also have a TRS-80 Model III in addition to my Sanyo MBC-555), hitting ENTER in response to an input prompt keeps the variable's value equal to whatever it was prior to the prompt.

The variables P, I, and Y are the permanent values used for principal, interest, and years. Hence, what I did here was to test to see whether a zero is recognized. The zero would most likely come about because somebody is looping through the program, and the program, through the IF . . . THEN test, will not set the permanent variables equal to the temporary ones. In the unlikely event that somebody actually began with a value of zero, that would be covered anyway, because even though the IF . . . THEN test would fail, the default value of zero would be assigned to the corresponding permanent variable anyway.

All the directions are contained within the program. After you input principal, interest rate and time in years, you are given the monthly payment amount, total amount you will pay back with the interest, and the total you will pay in interest. At this point you are given the option of changing some or all of these parameters. To do so, just hit the RETURN key. To keep any values the same, just hit RETURN. The new results will be output.

Once you decide you want more information on a particular situation, you may get a printout of a loan amortization table. This simply means that you will see how much of each payment is interest and how much is principal. The balance owed is also shown.

I hope you find this program as useful as I have. For more information, contact me at 129 Carol Drive, Clarks Summit, PA 18411. Send a self-addressed, stamped envelope if you wish a reply to any questions.

---

*(Dr. Michael W. Ecker is assistant professor of mathematics at the Worthington Scranton Campus of the Pennsylvania State University, as well as an author and contributing editor to Popular Computing and Byte magazines. His company, Recreational Mathematical Software, is marketing Magic Math, a collection of unusual mathematical recreations for the Sanyo and other IBM-compatible machines, as well as TRS-80 Models I, III and 4.)*



The listing:

```

1 CLS
2 PRINT: PRINT: PRINT: PRINT " FASTLOAN!": FOR
DELAY=1 TO 800: NEXT: CLS
3 PRINT " THIS PROGRAM GIVES MONTHLY PAYMENT AMOUNTS ON LOANS."
4 PRINT " ====="
5 FOR DELAY=1 TO 1500: NEXT
8 PRINT: PRINT
9 PRINT " --> FOR DOLLAR ENTRIES, DO NOT USE DOLLAR SIGN OR COMMA.": FOR
DELAY=1 TO 1500: NEXT
10 PRINT: PRINT " --> FOR INTEREST RATE, USE 12.5 FOR 12.5%."
15 PRINT
17 FOR DELAY=1 TO 1000: NEXT
18 PRINT
20 INPUT "PRINCIPAL (AMOUNT BORROWED)";PT: IF PT<>0 THEN P=PT
30 INPUT "ANNUAL INTEREST RATE (percent)";IT: IF IT<>0 THEN I=IT
35 R=I/100
40 INPUT "HOW MANY YEARS";YT: IF YT<>0 THEN Y=YT
50 A=(P*R)/(12*(1-(12/(12+R))^(12*Y)))
85 PRINT: PRINT "THE MONTHLY PAYMENT IS"
90 PRINT USING "$###.##";A
95 PRINT: PRINT "TOTAL PAID = ";: PRINT USING "$###.##";12*Y*A;
97 PRINT " INTEREST PAID = ";: PRINT USING "$###.##";12*Y*A-P
100 PRINT: PRINT "*****"
*****
105 PRINT " FOR A LOAN AMORTIZATION TABLE, TYPE 'A' AND HIT <RETURN>."
110 PRINT " FOR DIFFERENT VALUES, JUST HIT <RETURN> without the 'A'."
115 PRINT " NOTE: WHEN YOU ARE ASKED QUESTIONS AGAIN, IF YOU HIT"
116 PRINT " <RETURN>, COMPUTER WILL USE SAME VALUE(S) AS PREVIOUSLY"
117 PRINT " USED FOR THAT PARTICULAR QUESTION."
120 INPUT X$
125 CLS
127 IF X$="A" THEN 200
130 PRINT: PRINT: GOTO 20
200 PRINT " ..... AMORTIZATION TABLE ..... "
202 PRINT " based on a monthly payment of ";
203 PRINT USING "$###.##";A
204 FOR DELAY=1 TO 1000: NEXT: PRINT
206 PR=P
208 FOR YY=1 TO Y
209 PRINT: PRINT: PRINT: PRINT
210 PRINT "PAYMENT #", "INTEREST", "PRINCIPAL", "BALANCE OWED"
215 PRINT
230 FOR J=1 TO 12
235 I1=PR*R/12
238 PRINT 12*(YY-1)+J,
240 PRINT USING "###.##";I1;
241 PRINT ,: PRINT USING "###.##";A-I1;
242 PRINT ,: PRINT USING "#####.##";PR-(A-I1)
245 PR=PR-(A-I1)
248 NEXT J
250 PRINT: PRINT: PRINT: INPUT " <RETURN> to continue...";AA$
260 NEXT YY
275 PRINT: PRINT " THAT COMPLETES THE AMORTIZATION SCHEDULE."
280 PRINT: PRINT: INPUT " <RETURN> TO CONTINUE";AD$
300 CLS
310 PRINT " TO RESTART, HIT <RETURN>. ELSE HIT <BREAK> KEY."
320 INPUT AC$: CLS: GOTO 20
500 END

```



# MS-DOSsier

## MASTERING MS-DOS

*By Danny Humphress  
Soft Sector Technical Editor*

**B**ehind every great computer is an operating system. On the Sanyo 550/555, it's MS-DOS that brings it to life. He who masters MS-DOS has mastered his Sanyo. Becoming an MS-DOS master is not a task for the weak-spirited, though. It takes courage, stamina, and the willingness to forge on when the documentation leaves you hanging. Over the course of the next several months, for those of you who feel up to the challenge, we're going to give you a guided tour straight to the heart of . . . The MS-DOS Zone.

Seriously, when compared to other operating systems, MS-DOS is no harder to learn than the rest, and it's certainly less complicated than some for all its power.

This is not a "Getting Started Quickly" course. We're going to start with the fundamentals of using MS-DOS and give you a slow but thorough course in the finer points of using this operating system. For those who've already become comfortable with MS-DOS, bear with us. We don't want to lose anyone along the way.

This month, we're going to learn what an operating system such as MS-DOS does and how it works with the computer. This will give us the foundation for a thorough understanding of this operating system.

### What Is MS-DOS?

The Sanyo 550/555, like any other computer, is just a combination of components and devices. The disk drives, keyboard, display, and the computer's processor are merely connected together. With no "super program" to get these things working together to achieve a goal, they are useless.

MS-DOS is the "super program." It does the hard, fundamental work that our applications programs don't want

to worry with. When we type a character on the keyboard, it's MS-DOS that tells the computer things like "Hey! Someone pressed a key, and I want you to display that character on the first line of the screen." Or, "I need to find a file on the disk drive. Let's look at the disk's directory to see if it's there." MS-DOS is a program that's always working. Whether we're using *WordStar* or *Accounts Receivable*, MS-DOS is down where the action is, doing all the dirty work that the almighty applications programs are too "advanced" to do.

### Devices

To MS-DOS, the Sanyo 550/555 is like a corporation. As a corporation has an accounting department, a filing department, and an advertising department, your computer has a keyboard department, a display department, a communications department and many others. Each department has its own specialized duties to perform. MS-DOS is the Board of Directors telling the departments what to do. These departments are called "Devices."

The normal devices on a Sanyo are the disk drives, the console (keyboard and display), the printer port, and the RS-232 port. When you give MS-DOS commands, you tell it which device you'll be using for input and output. If you don't give it a specific device name, it assumes you mean the normal or default device for the particular command.

MS-DOS gives the devices special names. The device names are:

A: First Floppy Disk Drive  
B: Second Floppy Disk Drive  
AUX: The Auxiliary Device (RS-232)  
CON: The Console (Keyboard & Display)  
PRN: The Printer

As we can copy files from one disk drive to another, we can copy files from any other device to another, because all devices are equal in the eyes of MS-DOS. We can just as easily copy a disk file to the printer as we can copy it to another disk.

You may be totally lost at this point, but you'll need to have at least a little background on devices before we dive into the depths of MS-DOS. The significance will become clearer to you as we explore further.

### Disk Files

Just as with a filing cabinet, collections of related information on the computer's disk are called "files." Everything stored on the disk is stored in a specific file. Some files contain programs, others contain data that programs use. Some files, not unlike a hanging file system, contain other files.

We give disk files specific names. For instance, let's say that we have a customer database file. MS-DOS requires that we give this file a name when we create the file (we'll talk about creating files later on). MS-DOS has certain rules that we must follow when naming files. First, no two files in the same directory (read further for an explanation of directory) can have the same name. Filenames consist of a name and an "extension."

The filename can be up to eight characters long and may have any combination of letters and digits and certain special characters (see your MS-DOS manual for a list of the allowed special characters). The extension may contain up to three characters and/or digits and is usually used to specify what type (program, data, etc.) it is.

---

*(Danny Humphress, SOFT SECTOR's Technical Editor, is the owner of a computer software and consulting firm in Louisville, Ky. Danny brings to SOFT SECTOR his extensive experience with small business computers and applications software.)*

---



# MS-DOSsier

## MASTERING MS-DOS

By Danny Humphress  
Soft Sector Technical Editor

Behind every great computer is an operating system. On the Sanyo 550/555, it's MS-DOS that brings it to life. He who masters MS-DOS has mastered his Sanyo. Becoming an MS-DOS master is not a task for the weak-spirited, though. It takes courage, stamina, and the willingness to forge on when the documentation leaves you hanging. Over the course of the next several months, for those of you who feel up to the challenge, we're going to give you a guided tour straight to the heart of . . . The MS-DOS Zone.

Seriously, when compared to other operating systems, MS-DOS is no harder to learn than the rest, and it's certainly less complicated than some for all its power.

This is not a "Getting Started Quickly" course. We're going to start with the fundamentals of using MS-DOS and give you a slow but thorough course in the finer points of using this operating system. For those who've already become comfortable with MS-DOS, bear with us. We don't want to lose anyone along the way.

This month, we're going to learn what an operating system such as MS-DOS does and how it works with the computer. This will give us the foundation for a thorough understanding of this operating system.

### What Is MS-DOS?

The Sanyo 550/555, like any other computer, is just a combination of components and devices. The disk drives, keyboard, display, and the computer's processor are merely connected together. With no "super program" to get these things working together to achieve a goal, they are useless.

MS-DOS is the "super program." It does the hard, fundamental work that our applications programs don't want

to worry with. When we type a character on the keyboard, it's MS-DOS that tells the computer things like "Hey! Someone pressed a key, and I want you to display that character on the first line of the screen." Or, "I need to find a file on the disk drive. Let's look at the disk's directory to see if it's there." MS-DOS is a program that's always working. Whether we're using *WordStar* or *Accounts Receivable*, MS-DOS is down where the action is, doing all the dirty work that the almighty applications programs are too "advanced" to do.

### Devices

To MS-DOS, the Sanyo 550/555 is like a corporation. As a corporation has an accounting department, a filing department, and an advertising department, your computer has a keyboard department, a display department, a communications department and many others. Each department has its own specialized duties to perform. MS-DOS is the Board of Directors telling the departments what to do. These departments are called "Devices."

The normal devices on a Sanyo are the disk drives, the console (keyboard and display), the printer port, and the RS-232 port. When you give MS-DOS commands, you tell it which device you'll be using for input and output. If you don't give it a specific device name, it assumes you mean the normal or default device for the particular command.

MS-DOS gives the devices special names. The device names are:

A: First Floppy Disk Drive  
B: Second Floppy Disk Drive  
AUX: The Auxiliary Device (RS-232)  
CON: The Console (Keyboard & Display)  
PRN: The Printer

As we can copy files from one disk drive to another, we can copy files from any other device to another, because all devices are equal in the eyes of MS-DOS. We can just as easily copy a disk file to the printer as we can copy it to another disk.

You may be totally lost at this point, but you'll need to have at least a little background on devices before we dive into the depths of MS-DOS. The significance will become clearer to you as we explore further.

### Disk Files

Just as with a filing cabinet, collections of related information on the computer's disk are called "files." Everything stored on the disk is stored in a specific file. Some files contain programs, others contain data that programs use. Some files, not unlike a hanging file system, contain other files.

We give disk files specific names. For instance, let's say that we have a customer database file. MS-DOS requires that we give this file a name when we create the file (we'll talk about creating files later on). MS-DOS has certain rules that we must follow when naming files. First, no two files in the same directory (read further for an explanation of directory) can have the same name. Filenames consist of a name and an "extension."

The filename can be up to eight characters long and may have any combination of letters and digits and certain special characters (see your MS-DOS manual for a list of the allowed special characters). The extension may contain up to three characters and/or digits and is usually used to specify what type (program, data, etc.) it is.

*(Danny Humphress, SOFT SECTOR's Technical Editor, is the owner of a computer software and consulting firm in Louisville, Ky. Danny brings to SOFT SECTOR his extensive experience with small business computers and applications software.)*



The extension follows the name and is separated from it with a period. The following are allowable filenames:

ARMENU.BAS  
PROGRAM1.PRG  
CUSTOMER.DAT

**Note: The following only applies to the MS-DOS 2.11.**

### Directories

A collection of files is called a "directory." Most micro-computer operating systems limit you to a single directory on a disk. MS-DOS lets you have an unlimited number of directories on a single disk. This allows you to group related programs and data files together.

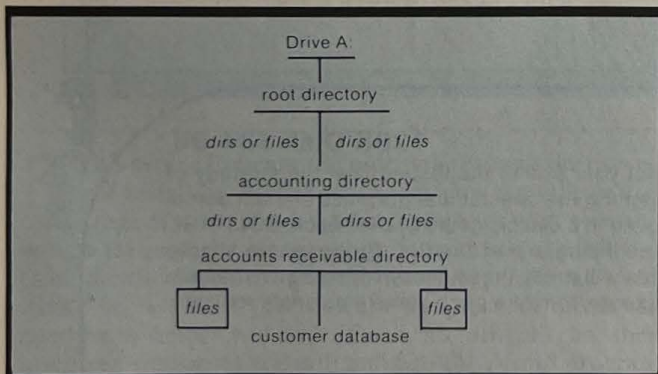
Segregating files in directories, especially on a hard disk, makes it easier and quicker for you (and MS-DOS) to locate a particular file. Because you know that your accounts receivable customer database is in the accounting directory, you don't have to search through all the other unrelated files on the disk to find it.

You can even have directories within directories. Using the above example, you may have a directory with all your accounting programs and files, and within it is a directory specifically for accounts receivable.

Directories on a disk, as with files, can be created and named by you, the user. You may use the same naming conventions you use when naming files except that you do not use a three-character extension. The following are valid directory names:

ADDEPT ACCTNG ARTDEPT PROGRAMS

The main directory for the disk is called the "root" directory. All other directories and files are actually a part of the root directory. The above example of the accounting department directory would look like this:



When we are referring to our customer database, we tell MS-DOS the correct "path." In this case, we start at the root directory, go to the accounting directory, then to the accounts receivable directory, and finally to our customer database. This route is called a "path."

MS-DOS has rules about how we give it directions to get to our data. If our accounting directory was called "ACCTNG," accounting's accounts receivable directory was called "AR," and our customer file called "CUSTOMER.DAT," we would use the following to specify a "path" to our customer database if it were on drive A:

A:\ACCTNG\AR\CUSTOMER.DAT

The "A:" device specification tells MS-DOS to look on

drive A. The first backslash tells it to start its journey at the root directory. The remaining backslashes separate the directories and the filename. MS-DOS will start in the ACCTNG directory, move into the AR directory (another directory within the ACCTNG directory), and finally find the CUSTOMER.DAT file.

If you were referring to a file in the root directory called "SAMPLES.BAS," your path name would be:

A:\SAMPLES.BAS

If you do not have a hard disk drive, you will most likely not use many levels of directories and sub-directories because of the relatively small number of files you can fit on a floppy disk. With a hard disk drive, however, it becomes important to group like files together to make them easier to get to.

Don't be surprised if you don't grasp all of this yet. When we get to the computer for hands-on work in future MS-DOS tutorials, this will all become clear as a whistle to you. As I mentioned earlier, this series is not designed to get you up and running with MS-DOS right away — the Manual that comes with your computer can do that. Our goal is to make you an MS-DOS master. With just the background that you've learned here today, you'll be surprised at how much easier it is to understand the explanations of MS-DOS commands in the Reference Manual.

In next month's Tutorial, we're going to get some practical experience with using directories and files as we learn to use some of the MS-DOS commands. Until then, you can learn and have fun, too, by doing some exploring on your own.



## MICHIGAN SOFTWARE DIST. INC. 43345 GRAND RIVER NOVI MI 48050 (313) 348-4477

### MICHIGAN SOFTWARE:

- PF KEY/FUNCTION KEY UTILITY ..... 9.95
- KEYWORD/KEYBOARD UTILITY ..... 9.95
- U.S. CAPITALS & STATES/GEOGRAPHY  
LESSON USING HIGH RES GRAPHICS:  
FOR YOUNG & OLD ALIKE ..... 29.95

### MICHTRON SOFTWARE:

- CASHMAN/GAME ..... 34.95
- DEMON SEED/GAME ..... 34.95
- MI-TERM/MODEM ..... 59.95
- SUPERZAP/EDITOR ..... 49.95
- UTILITY DISK/UTILITIES ..... 49.95
- M-DISK/MEMORY DRIVE ..... 34.95
- DS-DOS/DOUBLE SIDED DOS ..... 49.95
- SUPER DS-DOS/DS-DOS & MORE ..... 79.95

### HARDWARE

- HIGH RES COLOR MONITOR ..... 549.00
- DOUBLE SIDED RAW DRIVE ..... 209.00
- MEMORY/64K CHIPS ..... 75.00
- KEYBOARD EXTENDER ..... 24.95
- CENTRONICS PRINTER CABLE ..... 34.95
- 4 DRIVE CABLE ..... 49.95
- MACH II JOYSTICK ..... 44.95
- HARD DRIVE 6.4 MEG/LEVEL IV ..... 1999.95



# MichTron

## **FREEZE FRAME** by Ken Olson & Bill Dunlevy

**128K Disk \$39.95**

FREEZE FRAME is an incredibly versatile and accessible screen dump program. It works with most of the major graphics printers, and any other printer that can emulate one. FREEZE FRAME prints graphics and text from the screen, or straight from a disk file! And not only that, but you aren't stuck with printing the entire screen; You can define ANY portion you want! Another unique feature is that you can choose the printed hue of all the screen colors! FREEZE FRAME can be accessed from DOS, machine-language, or BASIC (with simple GET and CALL commands). You can even use a Quadram or Canon Ink Jet printer for FULL COLOR pictures! With FREEZE FRAME, you can REALLY get the picture... and KEEP it!

## **DC-10**

**SANYO 550/555 \$49.95**

This flight simulator is as close as you can get to flying a DC-10! You have total control of this tremendous aircraft: wingspan of 155 feet, cruising speed of 584 miles per hour, ceiling at 35,000 feet, range of 2705 miles, payload of 100,000 pounds, and three engines rated at 41,000 pounds of thrust! Make your own flight plans and travel around Europe, with six major airports, true-to-life navigation with radio aids and VOR beacons, wind effects, instrument panel with over 30 readouts, and even a random ENGINE OUT emergency! The manual is fully illustrated and detailed. It covers the control panel, flying techniques of the DC-10, simple flight maneuvers, emergency procedures, and sample flight briefings. The sky's the limit with DC-10!

## **QUICK & SIMPLE** by Jon Kring

**128K Disk \$49.95**

Here's the List Manager to end all your worries! Never again will you need to wrestle with those long data-base programs that swallow you in a maze of menus. QUICK & SIMPLE lets you input data directly into the computer with startling speed and simplicity, without loss of versatility. You can sort, store, and print your data in a variety of useful formats too. This program is QUICK enough to master in a matter of minutes.

## **SOLITARE** by J. Weaver Jr.

**128K Disk \$34.95**

Play Solitaire, Klondike, or Poker Squares alone, or put your skill to the test against the strategy of the computer in Cribbage. And if a crowd gathers watching the spectacular graphics of each game, there's no need to play alone; It's four against the House in a classic game of Blackjack! SOLITARE is a refreshing break from arcade games, without sacrificing any of the fun. The rules are simple enough for anyone to learn, yet even a master of cards will enjoy these fiendishly addictive games. The graphics are superb, and the rules are totally accurate, to make each game amazingly realistic. Shuffle over and play SOLITARE. It's your deal...

## **SUPER CALC III**

With our series of program overlays, you can convert one of the most powerful number processors available, to work on your Sanyo 550/555. You can purchase SUPER CALC III, including the necessary zaps required to run the program on your Sanyo 550/555, or if you already own SUPER CALC III for your IBM PC, you can buy just the "Zaps" at a bargain price.

Super Calc & Zaps ..... \$395.95  
Zaps Alone ..... \$29.95



# MichTron

6655 Highland Road  
Pontiac, Michigan 48054  
Orders & Info: (313) 666-4800  
**FOR YOUR CONVENIENCE,  
NOW AVAILABLE FROM YOUR  
FAVORITE SANYO DEALER!**



# Your Printer Can Shine With WordStar<sup>★</sup>

By Brian M. Stone  
Soft Sector Contributing Editor

**T**his article is meant to guide you through the process of installing *WordStar* so that you can take advantage of some of the special features of your printer. I will go through the *Install* program from start to finish so that you will be able to make the necessary modifications. It would be helpful if you took the time to read this article completely before you start. This is not difficult, but there are many responses you will make to the *Install* program; and if you make a mistake, it might not show up until you try to use *WordStar* when you do not have time to try to re-install it. (Throughout this article, what will appear on your screen is set in bold type for clarity.)

The following examples will assume that we are working with a Sanyo MBC-555 dual drive computer. Please do the following:

*(Brian M. Stone is the national sales manager for Comput Distributors, Inc., a division of Inacomp America, Inc. of Troy, Mich. Brian has been involved with computers since his purchase of the original Radio Shack Model I computer in July 1978.)*

- 1) Make a backup of your system disk (Format *B:/S*) placing command on the disk
- 2) Copy *WS.COM* to your new disk, in drive A:
- 3) Place *WordStar* disk 2 of 3 in drive B (Make sure it's write protected)
- 4) Type "*B:*" Press Return
- 5) Type "*INSTALL*" Press Return

The *Install* copyright will come on the screen and "**Type any key to continue . . .**" will be at the bottom, press Return. The next screen will tell what *Install* does and ask you "**Would you like to continue?**", press Return. Next *Install* will ask which product you would like to install — "**Product?**" Type "*WS*" and press Return.

*Install* will now display some basic information about itself. After reading this information, press Return. Your screen will now display "**Enter the disk drive name (a letter followed by a colon, B:) where *WordStar* files will be located while you run *Install*: then press Return.**" Type '*A:*' and press Return.

The screen will now read "**The installed *WordStar* is normally contained in *WS.COM*. If you are reinstalling *WordStar* or have previously renamed the file, enter the new name below; otherwise press Return.**"

**Name of file to install or Return for *A:WS.COM***

Press Return. The following will now be added to the screen:

**File to install is / *A:WS.COM***

When you are finished running this program, you will have an installed version of *WordStar* in a new file on the logged disk drive. It will be called *WS.COM*. If you wish to name the file something else, enter the name below. Otherwise press Return. To change the name, enter up to eight letters or numbers. The extension *.COM* will automatically be added to any name.

**Enter name of file for installed *WordStar*, or Return for *A:WS.COM*.**

Press Return. The screen will now show:

**File for installed *WordStar* is / *A:WS.COM***

**\*\*\* CAUTION \*\*\* This file already exists. If you make changes during this *Install* session and save the changes, you will overwrite this file.**

**If this is correct, enter 'Y' or press Return. If not, enter 'N'.**

Press Return. The following will now be added to the screen.

**You are installing the file *A:WS.COM* and producing the file *A:WS.COM*.**

**If this is correct, enter 'Y' or Return. If not, enter 'N'.**

Press Return. The screen will clear and "***Install* is now copying the file *A:WS.COM*, please wait**" will appear. Next the installation menu will fill the screen as follows:



\*\*\*\*\* INSTALLATION MENU \*\*\*\*\*

If you are installing a new copy of *WordStar*, you must select letter A to install your terminal, then letter C to *Install* your printer. If your terminal is not listed on the menu of terminals, return to this menu and select letter B. If your printer is not listed on the menu of printers, return to this menu and select letter D. If you want to change a particular *WordStar* feature, choose letter E.

- A Menu of Terminals
- B Custom installation of Terminals
- C Menu of Printers
- D Custom Menu of Printers
- E Menu of *WordStar* features
- X Exit *Install*

Enter the letter of your choice (A/B/C/D/E/X).

Type 'C', Return is not necessary. The screen will clear and the following will be displayed:

Printer is currently / IBM Parallel Printer

\*\*\*\*\* STANDARD PRINTER TYPES \*\*\*\*\*

Select the letter of your printer from the list below. This is menu 1 of 2; to view another menu press the appropriate number.

- A Standard printer

- B Sanyo PR-5000/5500
- C C. Itoh/TEC Starwriter/F10
- D Centronics 353
- E Centronics 739
- F Diablo 630
- G Diablo/Xerox 1610/1620
- H Diablo/Xerox 1640/1650
- I Epson MX80/100-no Grafrax
- J IBM Parallel printer
- K MPI 88G/99G
- L NEC 8023A Matrix printer

Enter the letter of your choice, or enter the appropriate menu number, or press Return to leave unchanged.

Press '2'. The screen will clear and the following will be displayed:

\*\*\*\*\* STANDARD PRINTER TYPES \*\*\*\*\*

Select the letter of your printer from the list below. This is menu #2 of 2; to view another menu, press the appropriate number.

- A NEC Spinwriter 3550
- B NEC Spinwriter specialty
- C Okidata ML84A
- D Olympia ESW-102
- E Qume Sprint 5-9/45-11+
- F TI 810/820
- G Backspacing standard
- H Half line feed printer



THAT'S NOT THE HARD COPY I WANTED.

Hint...

## Using A Monochrome Monitor?

The Sanyo 550 and 555 have a set of switches that control the translation of the eight displayed colors for a monochrome display. As it comes to you, the computer is set up to provide half-intensity and blinking characters, depending on the "color" being used. In programs intended for use with a color monitor, certain colors (including white) will flash on the screen, causing undesirable effects. (To see what I'm talking about, go into BASIC and run the WSCOLOR.BAS program on the main *WordStar* disk.)

If you plan to use color programs on a "black-and-white" Sanyo, you can change the switch settings to give a "gray-scale" effect, where you will see three shades of green (or whatever color your monitor is made for) instead of the various colors. Remove the cover and rear panel from the computer (following the instructions in Chapter six of the *Sanyo Operator's Guide*) and locate the DIP switch assembly marked DTS-4. Set switch 1 on the DIP switch to ON and the other three to OFF.

— Ed Ellers



Enter the letter of your choice, or enter the appropriate menu number, or press Return to leave unchanged.

Press 'I'. At this point you have had an opportunity to see all of the standard choices you have for printers. If you have one of the printers listed, go to the correct menu and make the selection.

For the time, we will assume that the printer we have is a standard Epson without Grafrax. This is choice 'I' from menu 1. Please select 'I' at menu 1, Return is not necessary. The screen will now show:

**You have chosen / Epson MX80/100-no Grafrax.  
Make sure any automatic line feed or local line feed  
switches on your printer are OFF.**

**If this is correct, enter 'Y' or Return. If not, enter 'N'.**

Press Return. There will be additional questions asked which should be answered as follows at this time:

#### \*\*\* COMMUNICATION PROTOCOL MENU \*\*\*

Press Return.

#### COMMUNICATION MENU CONFIRMATION

Press Return again.

#### \*\*\*\* DRIVER MENU \*\*\*\*

Press Return.

#### DRIVER MENU CONFIRMATION

Press Return again.

You will now be returned to the Installation Menu. At this point you may type 'X' to exit from *Install*. If you do, you will be asked if you want the changes made to be saved. Or we can go on and select 'D' and do some custom modifications for the printer.

Press 'D', pressing the Return is not needed. The screen will now show:

#### \*\*\*\* PRINTER INSTALLATION MENU \*\*\*\*

If your printer was not listed on the menu of printers or, if you want to enhance the performance of your printer, you must provide some additional information about your printer. This information should be in the manual that comes with the printer. If not, talk to your dealer.

If you wish to install a specialty printer, select 'A' on the following menu.

If you wish to install a standard printer, select 'B' on the following menu.

If you just want to change a feature, select the appropriate letter on the following menu.

Type any key to continue . . .

Press Return.

#### \*\*\*\* PRINTER INSTALLATION MENU \*\*\*\*

A Automatic installation for specialty printers

B Automatic installation for standard printers

All printers

Specialty printer only

C Printer name

I Ribbon selection

D Initialization  
E Overprinting  
F Boldfacing  
G Protocol menu  
H Driver menu

J Vertical motion  
K Horizontal motion  
L Print modes  
M Phantom characters

#### Standard printers only

#### Optional

N Return / Line feed

O User defined functions

P Carriage roll

Q Character pitch

X Exit to INSTALLATION menu

Enter the letter of your choice (A-Q/X).

This is the menu that will allow us to really modify *WordStar* to take advantage of the special things that our printer is capable of doing. We can use the following areas to do the patching that suits our needs:

I Ribbon selection      2 control code sequences  
O User defined functions      4 control code sequences  
Q Character pitch      2 control code sequences

This now gives us eight optional commands that we can give the printer to turn on and off special functions such as superscript, subscript, condensed print, expanded print, underline or any number of features that you would like to use.

The following is an example of what we will be doing when we actually start entering control sequences. It shows how you can select the control codes in relation to using the control characters that will appear on your screen. There will also be some sequences shown (Initialization, Deinitialization, etc.), which will allow some printers to be more efficient with *WordStar*. Please install these where they are shown.

The following is what the screen looks like when you select 'I' from the Printer Installation Menu.

Press 'I', Return is not necessary. The screen will clear and the following will be displayed:

#### Alternate Ribbon Selection

With this control sequence, you can specify alternate ribbon selection, if your printer allows. What sequence of characters should be sent to the printer at the first "*^PY*" in your text?

Alternate ribbon selection function code sequence is currently: 0h 0h 0h 0h

Enter 'C' to change, or press Return to leave unchanged.

Even though your printer may not have the ability to change ribbon color, *WordStar* can use these control codes to do other things that you would like to do. *WordStar* doesn't know, nor does it care what you send to the printer. The only thing that matters is that the printer does what you want it to do.

Press 'C' and you will see the following:

You can enter a value in ASCII, decimal or hexadecimal codes. Precede each entry with these prefixes:

ASCII	:	( <i>^A</i> enters ASCII <i>^A</i> , a single value)
Hexadecimal	,	( <i>41</i> enters hexadecimal 41)
Decimal	#	( <i>#61</i> enters decimal 61)



To enter a sequence of characters, enter each one separately, followed by Return.

Press Return to leave a value unchanged. Enter a period (.) and press Return to terminate a sequence and to eliminate all subsequent values.

These special characters require hexadecimal input:

Return	(^M)	,0D
Period	(.)	,2E
^H (backspace)	(^H)	,08

Maximum entries for alternate ribbon selection function is 4.

Current	New
Value	Value
00h	xxx

Please remember to include one of the following characters: either a colon, comma, or a pound sign (#) before every entry to tell *Install* what number base your information is in. If you don't, it will not work.

At the point shown above by "xxx" you would enter the correct values for the function you would like the printer to do every time the first ^Y is included in your text. If you wanted to enter *CHR\$(27)* (which means ESCAPE and is the beginning of a number of different control codes), you could do it as follows: ,1b as Hex or #27 as decimal, press Return and go to the next sequence. If you only require one value, the next entry would be a period, then press Return. You will then be shown all of the entries that were made and be given the chance to make any corrections if necessary. If your code is correct, press Return, if not, press 'N' and you will go back to try again. If your entries are okay, then you will go to the next sequence for input or return to the menu if you are finished with that section.

Any other changes that you decide to make will all be made in the same way. There are some lists following that will define some of the more common printers and some of the possible options that are available to you. If you take the time to read all of this, even if your printer is not listed, you should be able to use the information from your owner's manual and this article to be able to make the changes you would like to have. See Figures 1 and 2 for two samples of how the control codes might be represented in your printer manual. The format may differ from brand to brand but the information will be there.

Figure 1

### Mannesmann Tally MT-180L

FUNCTION	ANSI CODE	EPSON CODE	BASIC ANSI CHARACTER STRING
LINE DENSITY			
6 LINES/INCH	ESC[3z	ESC2	CHR\$(27);"[3z"
8 LINES/INCH	ESC[4z	ESC0	CHR\$(27);"[4z"
EMPHASIZED ON	ESC[=z	ESCE	CHR\$(27);"[=z"
EMPHASIZED OFF	ESC[>z	ESCF	CHR\$(27);"[>z"

Figure 2

### Epson MX-80F/T Grafrax Plus

	DECIMAL	HEX	SYMBOL	FUNCTION
<ESC>	48	30	0	SET 8 LINES/INCH
<ESC>	50	32	2	SET 6 LINES/INCH
<ESC>	69	45	E	EMPHASIZED ON
<ESC>	70	46	F	EMPHASIZED OFF

### Epson FX-80 / FX-100

At the Main Install Menu choose the following:

Half-line Feed Printer (Printer Menu 2)  
No Protocol  
Primary List Device



Now choose 'D' initialization, from Printer Installation Menu.

Type 'C' to change the values (maximum 16).

Initialization: (used by *WordStar*, not the user).

Each of the following "xx" is followed by Return ,1B ,50 ,12 ,14 ,1B ,46 ,1B ,48 ,1B ,41 ,06 ,0D ,0C type '.' and Return.

Type 'C' to change the values (maximum 16).

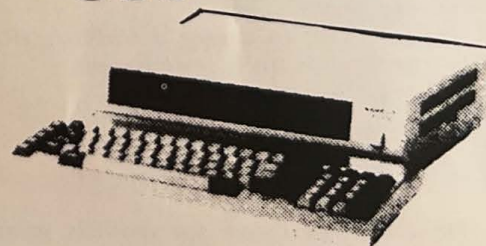
Deinitialization: (used by *WordStar*, not the user).

Each of the following "xx" is followed by Return ,1B ,50 ,12 ,14 ,1B ,46 ,1B ,48 ,1B ,41 ,0C ,0D ,0C type '.' and Return.

At the Printer Installation Menu type 'O' for user defined.

**SANYO**  
**IBM COMPATIBLE**  
**CERTIFIED™**  
**COMPUTERS**

**\$999**



**We absolutely guarantee  
LOWEST PRICES!**

**A COMPUTERMAN™ STORE**  
I-20 East Exit 38  
Atlanta, Georgia **404-482-7883**



Type 'C' to change the values (maximum 4).  
"^^PQ" will now turn on superscript.  
Each of the following ",xx" is followed by Return ,1B ,53 ,30 ,00.

Type 'C' to change the values (maximum 4).  
"^^PW" will now turn on subscript.  
Each of the following ",xx" is followed by Return ,1B ,53 ,31 ,01.

Type 'C' to change the values (maximum 4).  
"^^PE" will now turn off super-sub/script.  
Each of the following ",xx" is followed by Return ,1B ,54 type '.' and Return.

At this time we will not change "^^PR," just type Return to go to the Printer Installation Menu.

### Epson FX and MX-80 Type 3

At the Main Install Menu choose the following:

Half-line Feed Printer (Printer Menu 2)  
No Protocol  
Primary List Device

Now choose 'D' initialization, from Printer Installation Menu.

Type 'C' to change the values (maximum 16).  
Initialization: (used by *WordStar*, not the user).  
Each of the following ",xx" is followed by a Return ,1B ,40 ,1B ,41 ,06 ,1B ,45 ,0D  
Type '.' and return.

Type 'C' to change the values (maximum 16).  
Deinitialization: (used by *WordStar*, not the user).  
Each of the following ",xx" is followed by a Return ,1B ,40  
Type '.' and Return.

At Printer Installation Menu type 'N' to the change return/line feed.

Type 'C' to change the values.  
Line feed code: (used by *WordStar*, not the user).  
Each of the following ",xx" is followed by a Return ,0D ,0A ,0A  
Type '.' and Return.

One-half line feed code: (used by *WordStar*, not the user).  
Each of the following ",xx" is followed by a Return ,0D ,0A  
Type '.' and Return.

At the Printer Installation Menu type 'Q' to change char. pitch.

Type 'C' to change the values  
^^PN turn on 16.5 characters per inch  
Each of the following ",xx" is followed by Return ,12 ,1B ,45  
Type '.' and Return.

Type 'C' to change the values  
^^PN turn off 16.5 characters per inch ,1B ,46 ,0F  
Type '.' and Return.

At the printer installation menu type 'O' for user defined.

Type 'C' to change the values (maximum 4)  
"^^PQ" will now turn on five characters per inch  
Each of the following ",xx" is followed by a Return ,1B ,57 ,01  
Type '.' and Return.

Type 'C' to change the values (maximum 4)  
"^^PW" will now turn off five characters per inch  
Each of the following ",xx" is followed by a Return ,1B ,57 ,00  
Type '.' and Return.

Type 'C' to change the values (maximum 4)  
"^^PE" will now turn on underline ,1B ,2D ,01  
Type '.' and Return.

Type 'C' to change the values (maximum 4)  
"^^PR" will now turn off underline ,1B ,2D ,00  
Type '.' and Return.

At the printer installation menu type 'I' for ribbon selection.

Type 'C' to change the values  
The first "^^PY" will turn on italics ,1B ,34  
Type '.' and Return.

Type 'C' to change the values  
The second "^^PY" will turn off italics ,1B ,35  
Type '.' and Return.

Using the above as a guide, the following information will allow *WordStar* to use the bells and whistles of some addi-

(512)  
657-2012

**Hammer Bros.**

**Sanyo Games**

**Steed** - Go to the races and win a mint!!!  
Just like a real race track where the computer acts as the announcer after bets are placed. Includes win, place and show betting. **\$29.95**

**Vegas** - Educational and fun adaption of Black Jack. Teaches to add quickly so that more bets can be placed. Also helps develop decision making abilities. Follows the Las Vegas rules for the game including hits splitting, doubling bets, etc. Great fun for the whole family. **\$39.95**

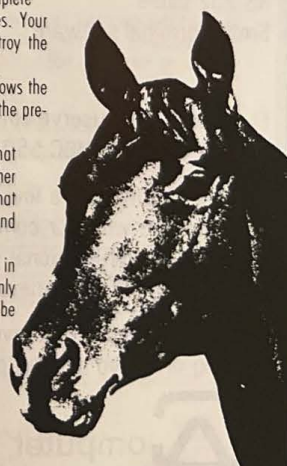
**TREK (Star Trek)** - A different version of the popular space adventure game named after the TV series "Star Trek." Complete with moving Klingons, Space storms and Star bases. Your mission, should you choose to accept it, is to destroy the evil Klingons and save the galaxy. **\$39.95**

**Mood Swing** - This is more than just a game. Allows the player to find out anyone's biorhythm knowing only the present date and the person's birthdate. **\$29.95**

**Cave Gremlin** - There are gremlins in the cave that you are exploring!!! Kill them and you'll survive other wise they'll get you. Gives warnings as to what dangers lie ahead. Two major obstacles: pits and gremlins. **\$29.95**

**Security Fence** - You have entered a secured area in which robots patrol to destroy any invaders. The only way to survive is to destroy the robots. They can be destroyed by bumping them into each other or by maneuvering them into the electrified fence. Great strategy game. **\$29.95**

**Space Pilot** - A lunar landing game where the players mission is to land a space ship safely at its destination. Be careful, if the decent is too fast, you'll crash!!! **\$29.95**



**14008 Nacogdoches  
San Antonio, Texas 78247**



tional printers.

### NEC PC-8023A Printer

#### INITIALIZATION (used by WordStar, not the user)

START	1B	54	31	32	1B	4E	SET LINE FEED TO 12/144"
END	1B	41	1B	4E			RESET TO 6 LPI

#### RETURN / LINE FEED (used by WordStar, not the user)

LF CODE	0D	0A	0A	2 LINE FEEDS PER CR
1/2 LF CODE	0D	0A		1 LINE FEED PER CR

#### CHARACTER PITCH

^PN STANDARD	1B	4E	PICA ON
^PN ALTERNATE	1B	51	CONDENSED ON

#### USER DEFINED

^PQ CODE	1B	45	ELITE ON
^PW CODE	1B	50	PROPORTIONAL ON
^PE CODE	1B	21	ENHANCED ON
^PR CODE	1B	22	ENHANCED OFF

#### RIBBON SELECTION

^PY TOGGLE ON	0E	ENLARGED ON
^PY TOGGLE OFF	0F	ENLARGED OFF

### Okidata 92/93/84

#### CARRIAGE ROLL (used by WordStar, not the user)

ROLL UP CODE	1B	4A	ROLL UP PARTIAL LINE
ROLL DOWN CODE	1B	4C	ROLL DOWN PARTIAL LINE

#### CHARACTER PITCH

^PN STANDARD CODE	1E	10 CHARACTERS PER INCH
^PN ALTERNATE CODE	1E	10 CHARACTERS PER INCH

#### USER DEFINED FUNCTIONS

^PQ CODE	1C	12 CHARACTERS PER INCH
^PW CODE	1D	17 CHARACTERS PER INCH
^PE CODE	1F	DOUBLE WIDE
^PR CODE	1D 1F	8.5 CHARACTERS PER INCH

#### RIBBON SELECTION

^PY TOGGLE ON	1B	31	CORRESPONDENCE MODE
^PY TOGGLE OFF	1B	30	DATA PROCESSING MODE

### Mannesmann Tally Spirit 80 and Epson MX-80F/T With Grafrax+

#### CHARACTER PITCH

^PN STANDARD	1B	34	ITALICS ON
^PN ALTERNATE	1B	35	ITALICS OFF

#### USER DEFINED

^PQ CODE	0E	DOUBLE WIDE ON
^PW CODE	14	DOUBLE WIDE OFF
^PE CODE	0F	CONDENSED ON
^PR CODE	12	CONDENSED OFF

#### RIBBON SELECTION

^PY TOGGLE ON	1B	2D	01	UNDERLINE ON
---------------	----	----	----	--------------

### COMMUNICATIONS . . .

Computer Associates, Inc. specializes in business and personal communications.

We stock hardware, software, and accessories for the Sanyo MBC-550 series computer.

Terminal package

MODEM 300 baud direct connect	\$79.95
RS-232 cable	\$19.95
Smart terminal software	54.95
	only \$154.85

Five hours Compuserve option	\$32.95
RS-232 board for MBC-550 (with pkg)	\$74.95

We are offering these low, low prices to acquaint you with our complete line of business and professional software for the Sanyo series of computers.

Send a self-addressed envelope for a free catalog of Sanyo support products.

**Computer Associates**

Box 683  
West Fargo, ND 58078  
Order line 701-281-0549  
24 hour BBS 701-281-0233

Hint . . .

## Looking For A Joystick?

The Sanyo accepts any joystick designed for the Apple II, II Plus and IIe which uses a 16-pin DIP plug (not the 9-pin plug used on the IIe and IIc). The Kraft joystick will function but it *will disable the printer port*. Whatever you do, be careful when you thread the cable through the port on the back! *Do not* let the wires become frayed, as happened to me from carrying my computer in a suitcase. One day I turned on my machine and got *nothing*! It turned out that one of the joystick wires was shorting to the chassis, causing the machine to be in a constant reset mode which meant that the drive light would not come on after the power switch was pressed.

Bob Tercero  
San Bruno, CA

## SANYO WINDOWS

MSDOS BIOS with WINDOWS  
CP/M-86 BIOS with WINDOWS  
MP/M-86 XIOS with WINDOWS

#### Key Software Products

440 Ninth Avenue Menlo Park, California 94025  
(415) 364-9847

(Dealer Inquiries Invited)

CP/M-86 and MP/M-86 are trademarks of Digital Research.  
MSDOS is a trademark of MicroSoft.



^PY TOGGLE OFFIB 2D 00 UNDERLINE OFF

BOLDFACING ^PB = ON & ^PB = OFF

SET STRIKE VALUE TO TWO FOR TWO PASSES ONLY (NOW SET TO THREE).

Now that you have seen how easy it is to change *WordStar* to suit your needs and get the most out of your printer, we are almost finished. After you make your last change you will be returned to the Printer Installation Menu. Type 'X' to exit to the Installation Menu. Your screen will clear and the Installation Menu will appear. Press 'X' again, the screen will clear again and the following will appear:

The changes made during this session of *Install* are stored in a temporary file. You may now save these changes in your installed file *A:WS.COM*.

These are your current values:

Terminal : SANYO MBC-550/555 9/30/83  
Printer : EPSON MX80/100 no-Grafrax  
Communication  
protocol : No protocol  
Driver : Parallel printer driver

\*\*\*\* EXIT OPTIONS MENU \*\*\*\*

- A Save the changes made during this *Install* session
- B Quit this session of *Install* without saving the changes
- C Change any of your choices / Remain in *Install*

Enter the letter of your choice (A/B/C).

Press 'A'. The screen will clear once again and the following message will appear:

Your new installed *WordStar* file is *A:WS.COM*.

You are returning to the operating system.

B:

The B: prompt indicates that you are now logged onto drive B:. The next thing to do is log onto drive A:. Type A: and press Return. Put *WordStar* disk 1 of 3 in drive B:. Now type the following: *COPY B:WS\*.OVR A:* and press Return. The two overlay files *WSOVLY1.OVR* and *WSMSG5.OVR* will be copied from drive B: to A:. When this is done you will have a complete and ready to use *WordStar* disk which you should use as a master. Make a backup of this disk to use every day; then if something goes wrong you will not have to start from scratch.

We have one of the most powerful word processors available so let's take advantage of it and make it work for us. *WordStar* is easy to use (you only have to learn what you need to start), yet it can do just about anything you will ever want to do. And besides, you got it *free* with your Sanyo MBC-550 series computer.



## WE WROTE THE BOOK ...and we just made it better

The Sanyo 550/555 Series Personal Computer handbook is now in its second printing. Expanded to include MS-DOS 2.11 commands and written in an easy to use manner, makes it a natural companion for the beginning user. This Handbook is written like a guided tour through the machine and covers the following partial list of items:

★ Joystick Calibration & Programming      ★ File Commands  
★ Using BASIC      ★ EDLIN & DEBUG Commands  
★ Directory Trees      ★ Graphics and Joystick Programming  
★ MS-DOS 1.25 & 2.11 Commands      ★ 8 or 9 Sectors/track formatting  
★ Print Buffers, More etc. Commands

It contains a list of errors present in the Sanyo Operator's Guide shipped with the machine and a demonstration for all the software shipped. Only \$18.95 plus \$2.50 shipping and handling. Dealer prices available.

### SUBSCRIBE TO THE SANYO SOURCE

Newsletter and keep in touch with what's new at Sanyo and for the computer you bought. We show you how to get the most out of your machine and what applications others have found for the machine. Six fact filled issues provide you with the kind of information and assistance that many users have come to count on from Computer User Services. \$32.00/ year.

### ANNOUNCING 45 EDUCATIONAL PACKAGES

for the Sanyo including SAT Score builder. They range from Grade 1 through College covering arithmetic, chemistry, verbs, vocabulary, calculus, trigonometry, sentences, and etc. and all for only \$34.95 each. Written by teachers for their students, they produce fun and learning at the same time. They have built in teacher controls if needed and score analysers. Send for the colorful descriptive brochure. Discounts are available on volume orders.

DEALERS, send for our sampler with free standing display binder. It will provide you with a series of our questions from four categories so you won't have to make a large purchase to

find out how great and useful these programs are. You will be very pleased for only \$21.95 plus \$2.00 Shipping. Regular price \$26.00.

### WANT TO USE IBM BASIC PROGRAMS ON YOUR SANYO BUT CAN'T?

Wait no longer! We have just the thing for you. Our program IBMTOSAN takes your IBM program and converts it so that it can be used on your Sanyo. This opens up a whole world of software for you. Sold elsewhere for \$59.95 --OUR PRICE \$49.95 and get a Flip 'N' File/15 storage case free. A \$9.99 value.

### NOTICE TO DEALERS

We are a master distributor for all the above. We can offer you attractive discounts on smaller quantities which makes our distribution plan just what you're looking for. Call or send for details.

Name \_\_\_\_\_  
Address \_\_\_\_\_  
City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_

Handbook at \$18.95 + \$2.50 S&H \_\_\_\_\_

The Sanyo Source at \$32./yr. \_\_\_\_\_

IBMTOSAN at \$49.95 \_\_\_\_\_

Dealer SAMPLER at \$21.95 + \$2.00 \_\_\_\_\_

Total Shipping \_\_\_\_\_

Check with order Total \_\_\_\_\_

Although we ship as soon as possible allow up to 2-3 weeks for delivery.

### COMPUTER USER SERVICES

230 Anderson Street

Hackensack, N.J. 07601

(201) 343-2590



^PY TOGGLE OFF IB 2D 00 UNDERLINE OFF

BOLDFACING ^PB = ON & ^PB = OFF

SET STRIKE VALUE TO TWO FOR TWO PASSES ONLY (NOW SET TO THREE).

Now that you have seen how easy it is to change *WordStar* to suit your needs and get the most out of your printer, we are almost finished. After you make your last change you will be returned to the Printer Installation Menu. Type 'X' to exit to the Installation Menu. Your screen will clear and the Installation Menu will appear. Press 'X' again, the screen will clear again and the following will appear:

The changes made during this session of *Install* are stored in a temporary file. You may now save these changes in your installed file *A:WS.COM*.

These are your current values:

Terminal : SANYO MBC-550/555 9/30/83  
Printer : EPSON MX80/100 no-Grafrax  
Communication  
protocol : No protocol  
Driver : Parallel printer driver

\*\*\*\* EXIT OPTIONS MENU \*\*\*\*

- A Save the changes made during this *Install* session
- B Quit this session of *Install* without saving the changes
- C Change any of your choices / Remain in *Install*

Enter the letter of your choice (A/B/C).

Press 'A'. The screen will clear once again and the following message will appear:

Your new installed *WordStar* file is *A:WS.COM*.

You are returning to the operating system.

B:

The B: prompt indicates that you are now logged onto drive B:. The next thing to do is log onto drive A:. Type A: and press Return. Put *WordStar* disk 1 of 3 in drive B:. Now type the following: *COPY B:WS\*.OVR A:* and press Return. The two overlay files *WSOVLY1.OVR* and *WSMSG5.OVR* will be copied from drive B: to A:. When this is done you will have a complete and ready to use *WordStar* disk which you should use as a master. Make a backup of this disk to use every day; then if something goes wrong you will not have to start from scratch.

We have one of the most powerful word processors available so let's take advantage of it and make it work for us. *WordStar* is easy to use (you only have to learn what you need to start), yet it can do just about anything you will ever want to do. And besides, you got it *free* with your Sanyo MBC-550 series computer.



## WE WROTE THE BOOK ...and we just made it better

The Sanyo 550/555 Series Personal Computer handbook is now in its second printing. Expanded to include MS-DOS 2.11 commands and written in an easy to use manner, makes it a natural companion for the beginning user. This Handbook is written like a guided tour through the machine and covers the following partial list of items:

★ Joystick Calibration & Programming      ★ File Commands  
★ Using BASIC      ★ EDLIN & DEBUG Commands  
★ Directory Trees      ★ Graphics and Joystick Programming  
★ MS-DOS 1.25 & 2.11 Commands      ★ 8 or 9 Sectors/track formatting  
★ Print Buffers, More etc. Commands

It contains a list of errors present in the Sanyo Operator's Guide shipped with the machine and a demonstration for all the software shipped. Only \$18.95 plus \$2.50 shipping and handling. Dealer prices available.

### SUBSCRIBE TO THE SANYO SOURCE

Newsletter and keep in touch with what's new at Sanyo and for the computer you bought. We show you how to get the most out of your machine and what applications others have found for the machine. Six fact filled issues provide you with the kind of information and assistance that many users have come to count on from Computer User Services. \$32.00/ year.

### ANNOUNCING 45 EDUCATIONAL PACKAGES

for the Sanyo including SAT Score builder. They range from Grade 1 through College covering arithmetic, chemistry, verbs, vocabulary, calculus, trigonometry, sentences, and etc. and all for only \$34.95 each. Written by teachers for their students, they produce fun and learning at the same time. They have built in teacher controls if needed and score analysers. Send for the colorful descriptive brochure. Discounts are available on volume orders.

DEALERS, send for our sampler with free standing display binder. It will provide you with a series of our questions from four categories so you won't have to make a large purchase to

find out how great and useful these programs are. You will be very pleased for only \$21.95 plus \$2.00 Shipping. Regular price \$26.00.

### WANT TO USE IBM BASIC PROGRAMS ON YOUR SANYO BUT CAN'T?

Wait no longer! We have just the thing for you. Our program IBMTOSAN takes your IBM program and converts it so that it can be used on your Sanyo. This opens up a whole world of software for you. Sold elsewhere for \$59.95 --OUR PRICE \$49.95 and get a Flip 'N' File/15 storage case free. A \$9.99 value.

### NOTICE TO DEALERS

We are a master distributor for all the above. We can offer you attractive discounts on smaller quantities which makes our distribution plan just what you're looking for. Call or send for details.

Name \_\_\_\_\_  
Address \_\_\_\_\_  
City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_

Handbook at \$18.95 + \$2.50 S&H \_\_\_\_\_

The Sanyo Source at \$32./yr. \_\_\_\_\_

IBMTOSAN at \$49.95 \_\_\_\_\_

Dealer SAMPLER at \$21.95 + \$2.00 \_\_\_\_\_

Total Shipping \_\_\_\_\_

Check with order Total \_\_\_\_\_

Although we ship as soon as possible allow up to 2-3 weeks for delivery.

### COMPUTER USER SERVICES

230 Anderson Street

Hackensack, N.J. 07601

(201) 343-2590



## RACKSELLERS

The stores listed below carry **Soft Sector** on a regular basis and may have other products of interest to Sanyo 550 series users. We hope you will patronize those in your area.

### ALABAMA

Madison Madison Books

### ARIZONA

Flagstaff Datasystems  
Mesa Mesa Computer Mart  
Phoenix Programs Unlimited

### CALIFORNIA

Arroyo Grande "Help" Computer Services  
Los Angeles Computer Phone Mart  
Poway Creative Computer Corp.  
Santa Rosa Sawyer's News, Inc.  
Stockton Hardings Way News  
Walnut Creek ECX Computer Co.

### CONNECTICUT

Stamford Norman Block Associates  
Wallingford Comstat

### FLORIDA

Jacksonville Florida Computer Resources  
Longwood Adventure International  
Merritt Island Compuworld  
Miami Computers, Computers, Computers  
Sarasota Family Computers  
St. Petersburg Software Connection  
Stuart Computer Market Place  
Tampa Magnum I Computers

### GEORGIA

Atlanta Guild News Agency  
Lithonia Certified, Inc.

### IDAHO

Nampa Canyon Computers & Communications

### ILLINOIS

Bloomington J. Powell & Associates  
Rockford Learn-A-Bit

### INDIANA

Ft. Wayne Bytrex

### KENTUCKY

Louisville Software Source

### LOUISIANA

Gretna The Computer Supply Store

### MICHIGAN

Berkley Family Computers  
Charlotte Computer Options  
Dearborn DSL  
Farmington ComputerTowne  
Mt. Clemens Business Computer Systems  
Novi MI Software Dist., Inc.  
Owosso C/C Computer Systems  
Rochester Rochester Book Center  
Royal Oak New Logic Computers  
Wyoming Gerry's Book Co.

### MISSOURI

Republic Franklin Computers

### NEW HAMPSHIRE

Berlin ENS Computing

### NEW JERSEY

Hackensack Total Circulation

### NEW MEXICO

Albuquerque Zia Computers

### NEW YORK

Lake Grove Programs Unlimited  
Plattsburg Adirondack Computer Supply

### NORTH DAKOTA

Riverside Computer Associates

### OHIO

Ashland Infopro  
Columbus The Book Rack  
Euclid Computer Warehouse  
Fairborn Genesis Micro Systems  
Greenville Hansbarger's  
Kettering Electronic Connexion  
Mafield  
Heights Programs Unlimited  
Niles Perfect Computers  
Toledo Computer Galeria

### OKLAHOMA

Tulsa Data Station — Tulsa

### PENNSYLVANIA

Philadelphia Some Hole In The Wall  
Systems Design  
Phoenixville Stevens Computer Center  
Warrington Computers Here

### TEXAS

Austin Capitol Micro Computers, Inc.  
Electronics Insight  
San Antonio Wagner Bros. Computer Store

### VERMONT

Rutland Computer Marketing

### VIRGINIA

Fredericksburg Salem Computer Center  
Virginia Beach Beach Business Machines  
Singer Company

### WASHINGTON

Olympia Computer Center  
Seattle R&K Enterprises  
Spokane Computer Shop of Spokane

### WISCONSIN

Janesville Emerald Computers

## ADVERTISERS INDEX

A-OK Computers .....	41	MEGA/NET Corporation .....	30
Certified Computers .....	58	Michigan Software Distributors, Inc. ....	53
Computer Associates .....	60	MichTron .....	IFC, 32, 54
Computer Gallery .....	49	Micro Equipment Corporation .....	21
The Computer Toolbox .....	27	Migraph Software .....	BC
Computer Marketplace .....	31, 48	Olympic Educational Software .....	3
Computer User Services .....	61	PCA Microsystems, Inc. ....	35
Display Video .....	39	Sanyo .....	28
Facts Online .....	14	Tex-Comp .....	5
Frontier Software, Inc. ....	40	TW Technologies, Inc. ....	IBC
Huron Systems .....	19, 21	Wagner Bros. ....	59
I&L Ltd. ....	24	Writing Consultants .....	44
J&M Systems, Ltd. ....	25		
Key Software Products .....	60		
Logical Software .....	37		

We encourage you to patronize our advertisers — all of whom support the Sanyo 550/555 series computers. We will appreciate your mentioning **SOFT SECTOR** when you contact these firms.



# SANYO 550/555 SUPER CHARGERS



## THOUGHT WORKS\* DATAFILE

Hard disk subsystem in 10-20-40 megabyte formatted capacities. All hardware and software provided for easy installation.

## TAPE BACKUP SUBSYSTEM

10 megabyte streaming tape for fast reliable hard disk backup. Internal and external units available.

## EXPANSION BUSS

Run many of the IBM compatible cards to provide memory expansion and many other functions.

## kCAP

Compress and expand files for fast, efficient storage. Backup with 40% fewer floppies in half the time.

## NETWORK

High speed lan linking 8bit and 16bit CPU's running MS-DOS\* OR CP/M\*.

## COPYLINK

Communications package for file transfer or emulation to over 40 systems. Auto redial, mailbox, telex automatically.

## SPECIAL 320/360K BIOS

Run single or double sided, 8 or 9 sector format drives simultaneously.

## CP/eMULATOR

Run CP/M 80 programs on Sanyo 550/555. Largest library of software available for your system.

\*Registered Trademark of THOUGHT WORKS, INC.  
Registered Trademark of DIGITAL RESEARCH  
Registered Trademark of MICROSOFT

Contact the **SANYO SPECIALISTS** for details and pricing

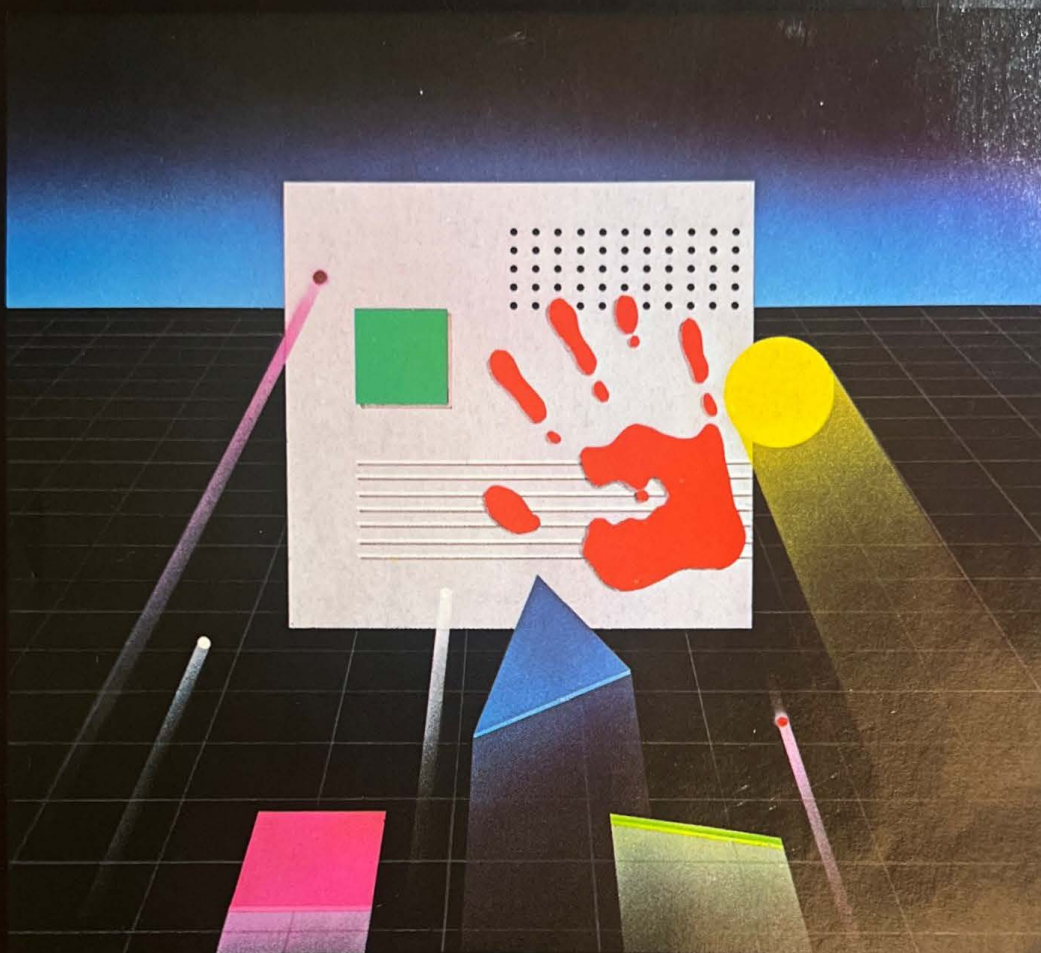
**T  
W  
Technologies, Inc.**

21636 N. 14th AVENUE, SUITE A2 • PHOENIX, AZ 85027  
(602) 581-0669



# Easy-Draw™

## The Easy Answer to Hi-Res Graphics



For the Sanyo 550/555 • with 128 or 256K • Color or Monochrome

Now you can easily draw hi-res pictures on your Sanyo 550/555 computer system. No programming knowledge is required, simply choose from the menu and start drawing!

Drawing commands include: dots, curves, rays, boxes, cubes, lines, circles, fill, and text. Utilities help you erase, save, and load pictures.

Advanced features for use with 256K include the ability to: move, copy, or invert any portion of a drawing, as well as pasting a portion from one drawing onto another.

**Easy-Draw™** also includes a picture disk with three pictures. All this for only \$59.95. Remember... **Easy-Draw™** The Easy Answer to Hi-Res Graphics.

### ADDITIONAL MIGRAPH PRODUCTS

**Free-Formatter™** — Now you can program in BASIC without having to use line numbers! A great programmer's aid. \$39.95

**Picture-Puzzle™** — An entertaining puzzle game. Comes complete with three pictures, or use the ones you created with **Easy-Draw™** \$39.95

### COMING SOON

**Easy-Draw™ Printer Utility** — Now you can easily print pictures that you have created with **Easy-Draw™**

**Business Graphics** — Create impressive charts: pie charts, bar graphs and point/line graphs using spread sheet data.

To order see your local dealer — or call **MIGRAPH (206) 839-6811**.

**MIGRAPH**  
SOFTWARE